YEFIMOV, V. P.: Master Med Sci (diss) -- "The limits and possibility of diagnosing injuries to the heart and pericardium in the early stage". Leningrad, 1958. 18 pp (Min Health RSFSR, Leningrad Sanitary-Hygiene Med Inst), 200 copies (KL, No 11, 1959, 122)

YEFIMOV, V.P.

Limitations and possibilities of the early recognition of cardiac and pericardial wounds. Trudy LSGMI 39:163-175 '58. (MIRA 12:8)

1. Kafedra rentgenologii i radiologii (zav.kafedroy - prof. B.M.Shtern) i Kafedra gospital'noy khirurgii (zav.kafedroy - z.d.n. prof.A.V.Smirnov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

(HEART, wounds & inj.
diag., early (Rus))
(PERICARDIUM, wds. & inj.
same)

L 07949-67 EWT(1)/EEC(k)-2/EWP(k) IJP(c) WG/GG
ACC NR: AP6027128 (A) SOURCE CODE: UR/0311/66/000/006/0022/0024

AUTHOR: Vol'kenshteyn, A. A. (Candidate of technical sciences); Yefremov, V. P. (Engineer); Kuvaldin, E. V. (Engineer); Matveyeva, O. K. (Engineer); Sazonov, V. M. (Engineer)

ORG: None

TITLE: Photometric equipment for pulsed light sources

SOURCE: Svetotekhnika, no. 6, 1966, 22-24

TOPIC TAGS: photometer, light pulse, laser pulsation, flash lamp

ABSTRACT: A unit for photometric measurement of pulsed light sources is described. This unit consists of three instruments: an FIL photometer for flash lamps, an FML-m photometer for lasers and a KOS standard light pulse generator. The FIL photometer may be used for measuring nearly all types of industrial flash tubes and the FML-m is used for measuring the radiation from free-emission lasers. The KOS instrument generates reproducible standard light pulses and is used for calibration of the two photometers. Photographs of each of the component instruments are given together with brief descriptions. The flash tube photometer may be used for measuring the luminous intensity of a light source with a maximum transverse dimension of 110 mm. The fundamental scale of the instrument has graduations of 100 candles/div, 10^5 nits/div and

Card 1/2 UDC: 535.242.2

10^{-3} ca·sec/div. These graduations may be expanded by five orders of magnitude for measuring higher intensities by changing the resistance of the load on the photocell or by using neutral light filters. The time characteristics of the instrument are: least resolved duration of the leading front -- $5 \cdot 10^{-7}$ sec; pulse duration -- no more than 10^{-2} sec. The approximate value of a graduation on the FML-m photometer is 10 w and 10^{-4} joules per unit of the reference scale. The upper limits of measurement are 10^{8} w and 10^{3} joules. The unit may be used for laser measurements in the 400-1100 mμ spectral region. The time resolution of the photocell is a few tenths of a microsecond. The KOS instrument generates pulses with a duration of approximately 3 μsec and a luminous intensity of 200,000 ca. The authors consider it their pleasant duty to mention the considerable part played by N. F. Shipul', L. I. Mel'nikova, R. V. Tsyvkin, V. M. Shpan'kov and V. N. Kornilov in development of this photometric equipment. Orig. art. has: 3 figures.

SUB CODE: 13, 20/ SUBM DATE: None/ ORIG REF: 005

YEFIMOV, V. P.

SOV/127-58-11-7/16

AUTHORS: Bekhtle, G.A. and Silishchenskaya N.M. Candidates of Technical Sciences, Glembotskiy, V.A., Professor, Plaksin, I.N., Member-Correspondent of the AS USSR, Yefimov, V.P. and Rumyantseva, N.M., Engineers, and Korolev, V.A., Research Worker

TITLE: The Flotation of Iron Minerals from Magnetic Separation Tailings of the Concentration Plant of the KMAruda Kombinat (Flotatsiya zheleznykh mineralov iz khvostov magnitnoy separatsii obogatitel'noy fabriki kombinata KMAruda)

PERIODICAL: Gornyy zhurnal, 1958, Nr 11, pp 28 - 31 (USSR)

ABSTRACT: About 800,000 tons of iron are lost each year in tailings on the Krivorozhskiy yuzhnyy gorno-obogatitel'nyy kombinat (Krivoy Rog Southern Concentration Plant) alone when the concentration of iron ore is done by magnetic separation. To reduce these losses, the Mekhanobr Institute long ago proposed the flotation method to extract the iron from the tailings. But the lack of an effective and inexpensive flotation reagent prevented the introduction of this method. Lately, the branch of the Institute of Mining of the AS USSR at the Kursk Magnetic Anomaly, in collaboration with the Tsentral'nyy nauchno-issledovatel'nyy institut (Central Scientific Research Institute) of the Lesokhimicheskaya promyshlennost'

Card 1/3

The Flotation of Iron Minerals from Magnetic Separation Tailings of the Concentration Plant of the KMAruda Kombinat

(Chemical Wood Pulp Industry)(TsNILKhI) tested a new flotation reagent. This reagent is the heavy fraction of the distillation of the gas-generating resin obtained in the process of wood gasification. A similar product, called Vetluga Oil, is being prepared at the Vetluzhskiy lesokhimicheskiy kombinat (Vetluga Chemical Wood Pulp Kombinat). Vetluga oil has the following characteristics: acid number - 26.9, the fraction output at temperatures up to 240°C including water - 13% of volume. It contains about 40% of high molecular phenols and their derivatives. Laboratory tests made with the tailings of ores from the KMAruda Kombinat showed that with the use of water glass as depressor and Vetluga oil as a flotation reagent, a concentrate containing 44-49% of iron was obtained. As a result of these tests, a scheme of tailing flotation was developed (Figure 5) and industrially tested in the flotation mill in Gubkin, which reprocesses the tailing of the magnetic separation. The 3 months of tests showed the possibility to obtain on an industrial scale a flotation concentrate containing 48-52% of iron. Vetluga oil was used as a collector-frother in a proportion of 600 gr/ton and the mixture of water glass and aluminum sulfate

The Flotation of Iron Minerals from Magnetic Separation Tailings of the Concentration Plant of the KMAruda Kombinat

in a proportion of 6 : 1 was used a depressor. The equipment scheme of the mill consisted of: 3 hydrocyclones ICD-300, 1 spiral classificator and 2 flotation machines M-5 with 10 compartments each. There are 2 tables, 4 graphs, 1 flow-chart and 2 Soviet references.

Card 3/3 1. Iron--Recovery

YEFIMOV, V.P., inzh.; GRITSAYENKO, A.I., inzh.

Economical collector for the flotation of iron ores. Gor. zhur. no.2:77-78 F'62. (MIRA 17:2)

1. Filial Instituta gornogo dela im. Skochinskogo, Moskva.

MIKHALYAK, Yu.P., gornyy inzh.; YEFIMOV, V.P., gornyy inzh.; PERCHINA, M.A., gornyy inzh.

Introduction of ore pebble crushing in the dressing of quartzites of the Kursk Magnetic Anomaly. Gor. zhur. no.7:69-72 Jl '65. (MIRA 18:8)

1. Gosudarstvennyy gornorudnyy kombinat Kurskoy magnitnoy anomalii.

YEFIMOV, V. P/ C/1962 1964

GEAR CUTTING

DECEASED

YEFIMOV, V. S.

"The Problem of Treating Gunshot Wounds of the Articulation Between the Tibia and the Bones of the Foot in a Military (Army) Sector During the Great Patriotic War 1941-1945." Cand Med Sci, Kazan' State Medical Inst; Kazan' State Inst for the Advanced Training of Physicians imeni V. I. Lenin, Kazan', 1954. (KL, No 11, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

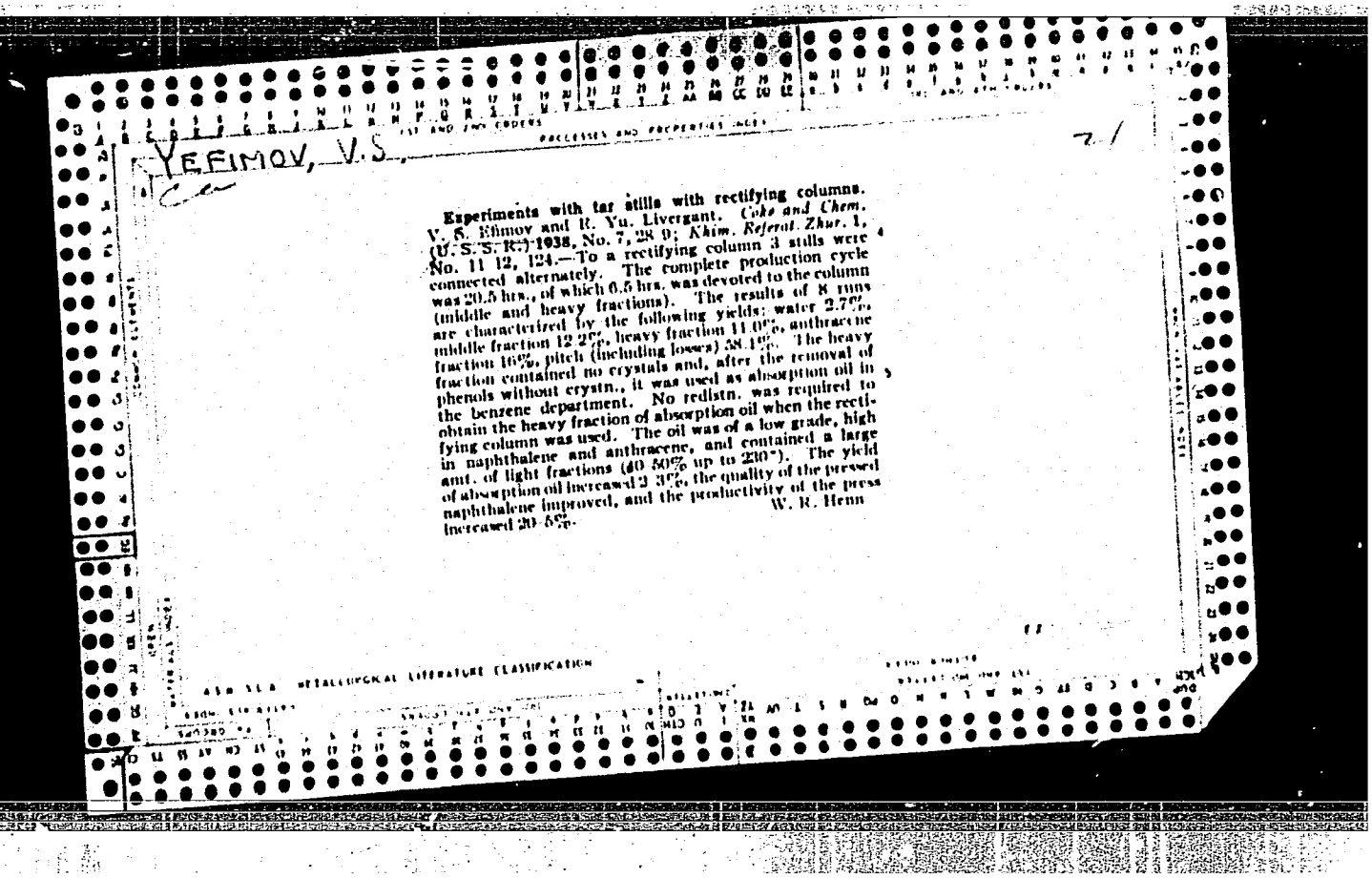
YEFIMOV, V.S.

Conservative amputation with use of dermato-plasty in extensive foot injuries. Ortop.travm. i protez. 19 no.4:37-40 Jl-Ag '58 (MIRA 11:11)

1. Iz kafedry khirurgii i neotlozhnoy khirurgii (zav. - prof. P.V. Kravchenko) Kazanskogo Gosudarstvennogo instituta dlay spetsializatsii i usovershenstvovaniya vrachey im. V.I. Lenina
(FOOT, wds & inr.
surg., conservative amputation with dermato-plasty in extensive inj. (Rus))
(AMPUTATIONS
foot, with plasty in extensive inj. (Rus))

YEFIMOV, V.S.

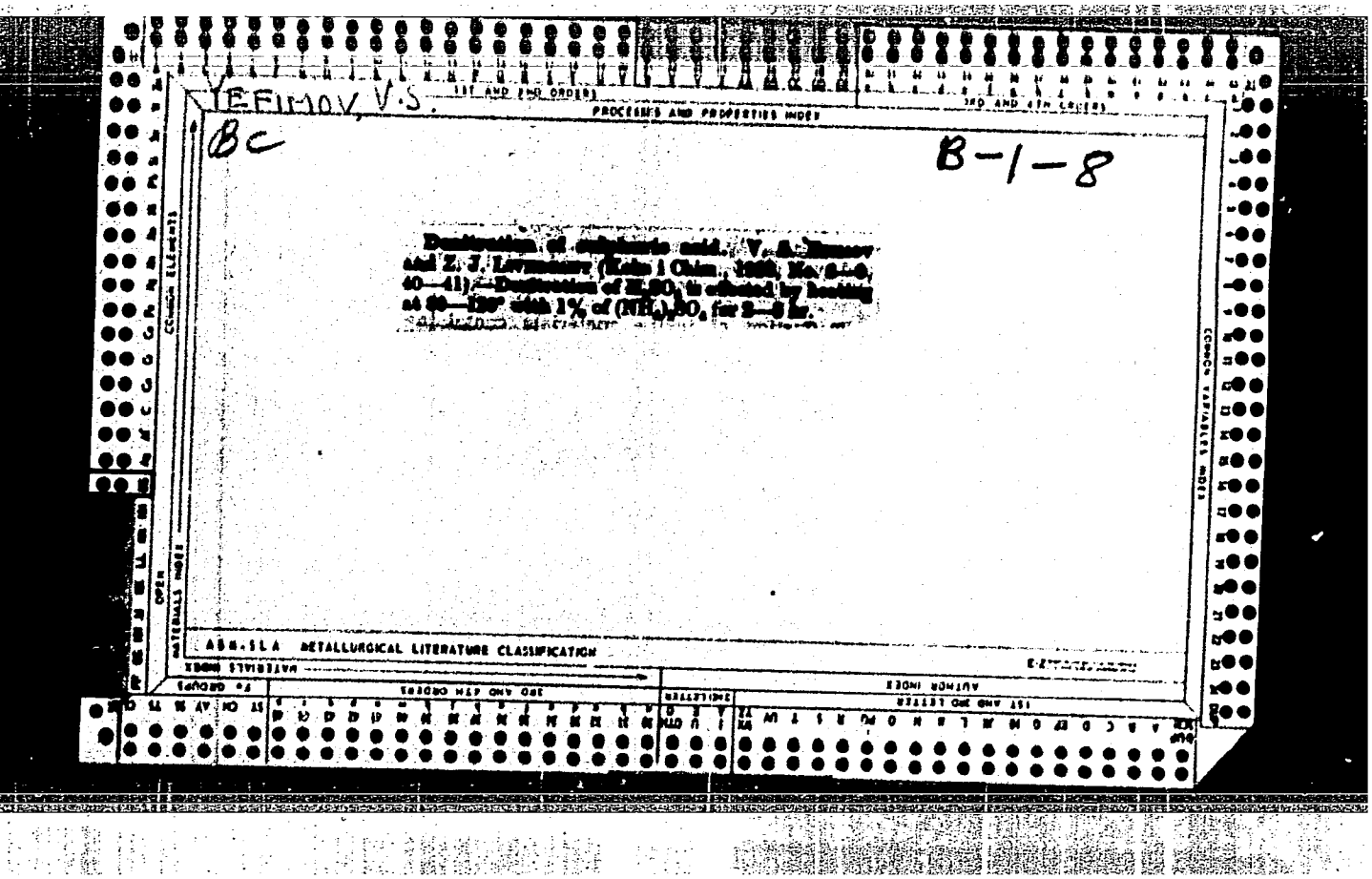
Urethroplasty by V.A. Gusunin's method in marked hypospadias.
Urologiia 24 no.6:41-44 '59. (MIRA 13:12)
(PENIS--SURGERY)

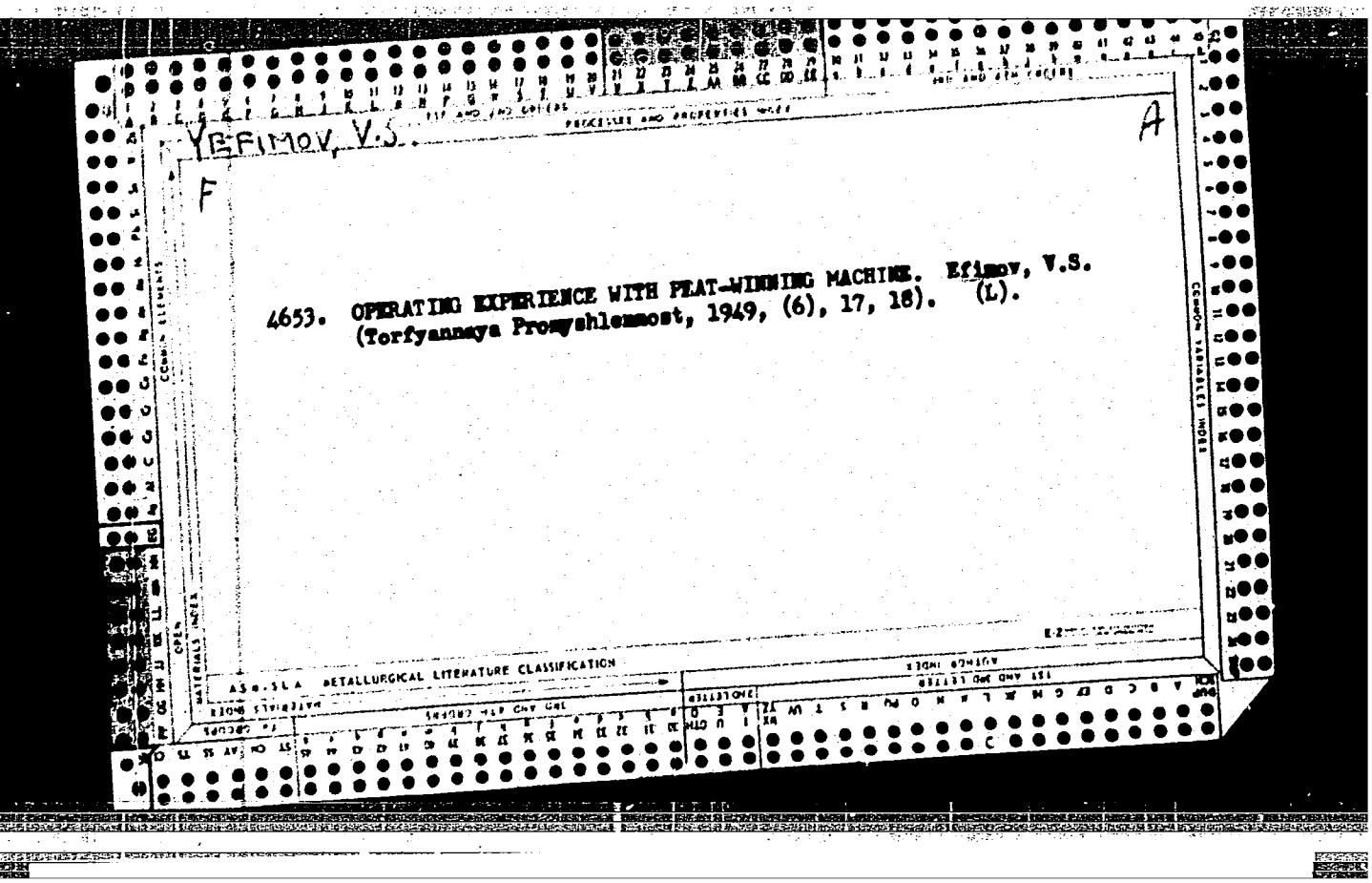


YEFIMOV, V.S.

Experiments with tar stills with rectifying columns. V. S. Efimov and R. Yu. Livergant. *Coke and Chem.* (U. S. S. R.) 1938, No. 7, 28-9; *Khim. Referat. Zhur.* 1, No. 11-12, 124.—To a rectifying column 3 stills were connected alternately. The complete production cycle was 20.5 hrs., of which 6.5 hrs. was devoted to the column (middle and heavy fractions). The results of 8 runs are characterized by the following yields: water 2.7%, middle fraction 12.2%, heavy fraction 11.0%, anthracene fraction 16%, pitch (including losses) 58.1%. The heavy fraction contained no crystals and, after the removal of phenols without crystn., it was used as absorption oil in the benzene department. No redistn. was required to obtain the heavy fraction of absorption oil when the rectifying column was used. The oil was of a low grade, high in naphthalene and anthracene, and contained a large amt. of light fractions (40-50% up to 230°). The yield of absorption oil increased 2-3%, the quality of the pressed naphthalene improved, and the productivity of the press increased 20-5%.

W. R. Henn





YEFIMOV, V.S.

A

F

4653. OPERATING EXPERIENCE WITH PEAT-WINNING MACHINE. Efimov, V.S. (Torfyannaya Promyshlennost, 1949, (6), 17, 18). (L).

YEFIMOV, V. S.

Peat Industry

Apparatus for breaking frozen beds in peat mining with digger-elevators. torf. prom. 29 no. 5, 1952 .

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

YEFIMOV, V. S.

Peat - Bibliography

Critique of A. V. Lazarev's pamphlet "Gathering in cut peat." Torf. prom. 29 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

EFIMOV, V.D.

The peatmen of Shatura are fulfilling their socialist obligations. Torf. prom. 30 no.6:7-8 Je '53. (MLRA 6:5)

1. Shaturskiy torfotrest. (Shatura (Moscow Province)--Peat industry)

BAUSIN, A.F.; SOKOLOV, A.A.; ANTONOV, V.Ya.; KURDYUMOV, S.V.; BEL'KEVICH, P.I.; SAVINYKH, A.I.; KARAKIN, F.F.; SOLOPOV, S.G.; YEFIMOV, V.S.; YARIVITSIN, V.I.; RABKIN, B.A.; BABARIN, A.F.; MATVEYEV, L.M.; FUNIKOV, S.A.; CHERNENKOV, D.P.; BULAYEVSKIY, N.V.; kandidat tekhnicheskikh nauk; SHINKARINK, K.K.; TSUPROV, S.A.; GINZBURG, L.N.; VASIL'YEV, Yu.K.

Scientific and technical conference on the work of the peat industry of the Ministry of Electric Power Stations. Torf.prom. 32 no.2:1-20 '55. (MLRA 8:5)

1. Zamestitel' ministra elektrostantsiy (for Bausin). 2. Zamestitel' direktora VNIITP (for Sokolov). 3. Zamestitel' direktora MTI (for Antonov. 4. Zamestitel' direktor "'krniimesttopprom" (for Kurdyumov). 5. Direktor Instituta torfa AN BSSR (for Bel'kevich). 6. Nachal'nik Glavenergozapchasti MES (for Savinykh). 7. Glavnyy inzhener Ivanovsko - go torfotresta (for Karakin). 8. Zamestitel' direktora MTI (for Solo pov) 9. Upravlyayushchiy Shaturskogo torfotresta (for Yefimov). 10. Glavnyy mekhanik Invanosvkogo torfotresta (for Yarovitsin). 11. Glavnyy mekhanik Leningradskogo torfotresta (for Rabkin). 12. Glavnyy inzhener Ozeretsko-Neplyuyevskogo torfopredpriyatiya (for Babarin). 13. Glavnyy inzhener Gor'kovskogo torfotresta (for Matveyev). 14 Rukovoditel' laboratorii VNIITP (for Funikov). 15. Glavnyy inzhener tresta Lentorfostroy (for Chernenkov).

(Continued on next card)

ALEKSEYEV, Ye.T.; APENCHENKO, S.S.; BASOV, A.P.; BAUSIN, A.F.; BERSHADSKIY, L.S.; VELLER, M.A.; GINZBURG L.N.; GUSEV, S.A.; DANILOV, G.V.; DOLGIKH, M.S.; DRUZHININ, N.N.; YEFIMOV, V.S.; ZAVADSKIY, N.V.; IVASHECHKIN, N.V.; KARAKIN, F.F.; KUZHMAN, G.I.; LOBANOV, S.P.; MERKULOV, Ya.V.; NIKODIMOV, P.I.; PANKRATOV, N.S.; PYATAKOV, L.V.; RODICHEV, A.F.; SMIRNOV, M.S.; STRUKOV, B.I.; SAVOCHKIN, S.M.; SAMSONOV, N.N.; SINITSYN, N.A.; SOKOLOV, A.A.; SOLOPOV, S.G.; CHELYSHEV, S.G.; SHCHEPKIN, A.Ye.

Fedor Nikolaevich Krylov; obituary. Torf. prom. 35 no.6:32 '58.
(MIRA 11:10)

(Krylov, Fedor Nikolaevich, 1903-1958)

YEFIMOV V T.

Distr: 4E4J

Kinetics of the reaction of liquid dinitrogen tetroxide with nitric acid / V. I. Atroshchenko and V. T. Efimov /

YEFIMOV, V. T.; LITVINENKO, I. I.

Device for automatic determination of the weight change of small samples. Zav. lab. 28 no.12:1529 '62. (MIRA 16:1)

1. Khar'kovskiy politekhnicheskiy institut im. V. I. Lenina.

(Testing laboratories—Equipment and supplies)

ATROSHCHENKO, V.I.; YEFIMOV, V.T. [IEfimov, V.T.]; LITVINENKO, I.I. [Lytvynenko, I.I.]; ALEKSEYEV, V.N. [Alekseiev, V.N.]; GALINSKIY, A.G. [Halyns'kyi, A.H.]

Investigating the process of the production of concentrated nitric acid in an autoclave with reflux packing rings. Khim. prom. [Ukr.] no.3:35-39 Jl-S '63. (MIRA 17:8)

1. Khar'kovskiy politekhnicheskiy institut (for Atroshchenko, Yefimov, Litvinenko). 2. Lisichanskiy khimicheskiy kombinat (for Alekseyev, Galinskiy).

ACC NR: AP6031790 SOURCE CODE: UR/0064/66/000/007/0038/0040

AUTHOR: Atroshchenko, V. I.; Yefimov, V. T.; Litvinenko, I. I.; Alekseyev, V. N.; Kutovoy, V. V.; Abrosimova, A. M.; Galinskiy, A. G.; Golius, L. M.

ORG: none

TITLE: Film-type autoclave for the production of concentrated nitric acid

SOURCE: Khimicheskaya promyshlennost', no. 7, 1966, 38-40

TOPIC TAGS: nitric acid, nitrogen compound, chemical engineering, chemical reactor, chemical plant equipment

ABSTRACT: A film-type autoclave (liquid reagents flow over the packing in form of a film) packed with aluminum coil coated with a fluorinated resin for production of concentrated nitric acid is described and its advantages over the conventional flooded-type autoclave are pointed out. The schematic of the autoclave is shown in figure 1. 98.4% nitric acid was obtained in this film-type autoclave at 25 atm, N_2O_4:H_2O ratio of 8.5-8.9, and a contact time of 17 min. At 40 atm and N_2O_4:H_2O = 8.1-8.7 and 17 min contact time, the acid concentration was equal to 98.7-99.2%. The oxygen consumption was close to the stoichiometric amount. It was found that the film-type autoclave is twice as effective as the flooded-type autoclave and that it compared very favorably from the standpoint of corrosion. Orig. art. has: 4 figures, 2 formulas.

UDC: 661.565 : 66.023.7

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001962410006-2"

ACC NR: AP6031790

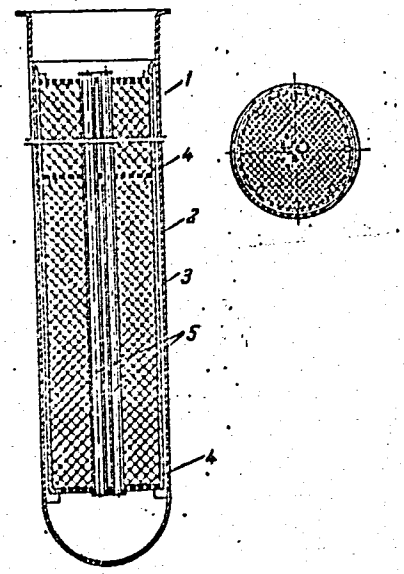


Fig. 1. 1--vessel; 2--shell; 3--coated aluminum coil; 4--grid; 5--concentrating tubes.

SUB CODE: 13,07/ SUBM DATE: none

Card 2/2

KARAYEROV, P.G.; YEFIMOV, V.V.

Participants in the All-Union Agricultural Exhibition are speaking. Spirt.prom. 20 no.4:4-8 '54. (MLRA 7:12)

1. Glavnyy agronom sovkhoza imeni Stalina (for Karayerov) 2. Starshiy zootekhnik Tyurnyasevskogo sovkhoza (for Yefimov).
(Moscow--Agricultural exhibitions)

SOV/96-59-6-20/22

AUTHOR: A. Sh. Zal'tsman (Engineer) and V.V. Yefimov (Engineer)

TITLE: Book Review: "The Future Development of Steam and Gas Turbines in Electric Power Stations" by S.A. Aksyutin, Mashgiz, 1957 (O knige S.A. Aksyutina, 'Perspektivy razvitiya parovykh i gazovykh turbin elektricheskikh stantsiy', Mashgiz, 1957)

PERIODICAL: Teploenergetika, 1959, Nr 6, pp 92-93 (USSR)

ABSTRACT: The book was reviewed in Teploenergetika Nr 11, 1958. This number contains two brief discussions as follows. Engineer A.Sh. Zal'tsman, p 92. The book deals with a number of current problems but the reviewer does not tell the reader enough about its contents and the main ideas of the author. Various recommendations are made to improve the book; in particular, Chapter 2 should be enlarged. There are numerous misprints but these and the other faults do not detract from the major achievement of the work.

Card 1/2

SOV/96-59-6-20/22

Book Review: "The Future Development of Steam and Gas Turbines in Electric Power Stations" by S.A. Aksyutin, Mashgiz, 1957

Engineer Yefimov, V.V. pp 92-93. The reviewer distracts attention to minor points and ignores the main conclusions and information given in the book. It is pointed out that in various respects the review was unsatisfactory.
There is 1 table.

Card 2/2

YEFIMOV, V.V.; FERANDI, K.I.; MUKHAMEDIN, S.

Boring bit with three nonradially arranged cutting edges. Gor. zhur. no.5:73 My '65. (MIRA 18:5)

1. Karagandinskiy nauchno-issledovatel'skiy ugol'nyy institut.

YEFIMOV, V.V.

Studying rotary-percussion drilling. Nauch. trudy KNIUI no. 11:31-34 '62. (MIRA 17:7)

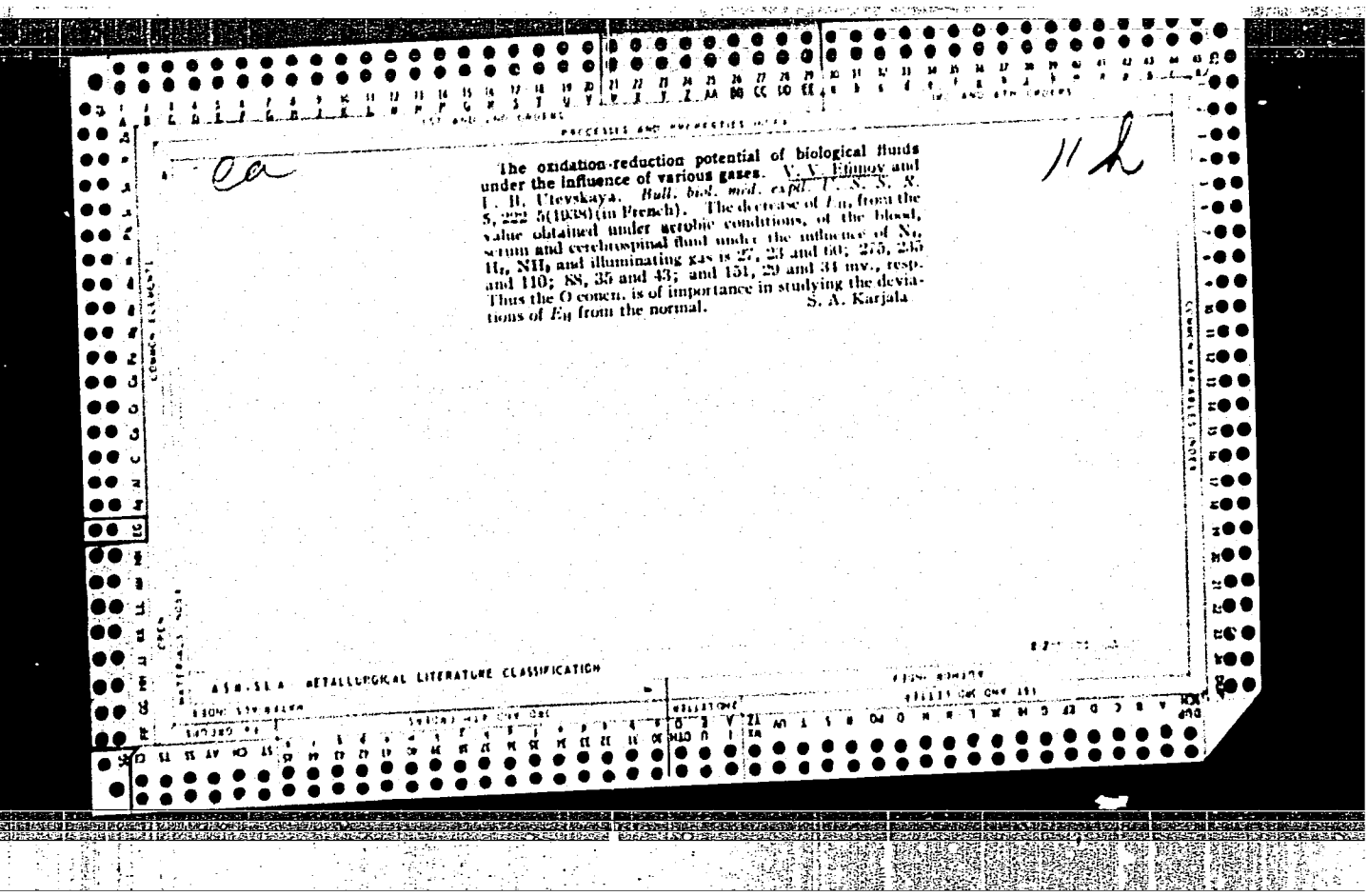
IVANCHENKO, G. Ye.; GEL'FAND, F.M.; YEFIMOV, V.V.

Operating conditions of the vibration percussion mechanism of the VBU-1 drill. Nauch. trudy KNIUI no.13:332-335 '64
(MIRA 18:1)

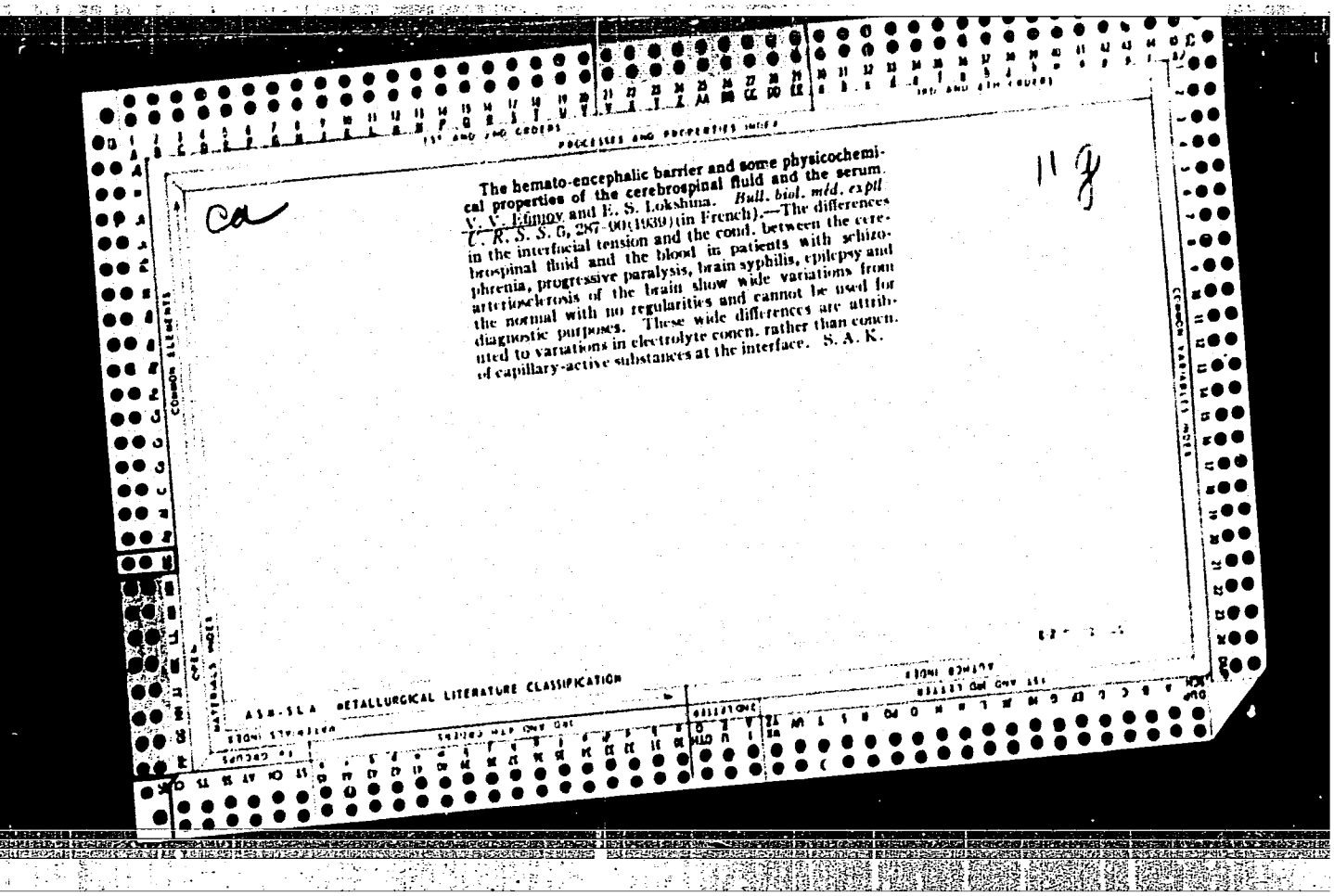
KOLESNIKOV, A.G.; YEFIMOV, V.V.

Apparatus for measuring energy transmitted by normal wind pressure to sea waves. Okeanologiia 4 no.3:505-512 '64 (MIRA 18:1)

1. Morskoy gidrofizicheskiy institut AN UkrSSR i Moskovskiy gosudarstvennyy universitet, Kafedra fiziki morya i vod sushi.



The oxidation-reduction potential of biological fluids under the influence of various gases. V. V. Efimov and I. B. Utevskaya. *Bull. biol. med. exptl. U.S.S.R.* 5, 222-5(1938)(in French). The decrease of E_h from the value obtained under aerobic conditions, of the blood, serum and cerebrospinal fluid under the influence of N_2, H_2, NH_3 and illuminating gas is 27, 23 and 60; 275, 235 and 110; 88, 35 and 43; and 151, 29 and 34 mv., resp. Thus the O concn. is of importance in studying the deviations of E_h from the normal. S. A. Karjala

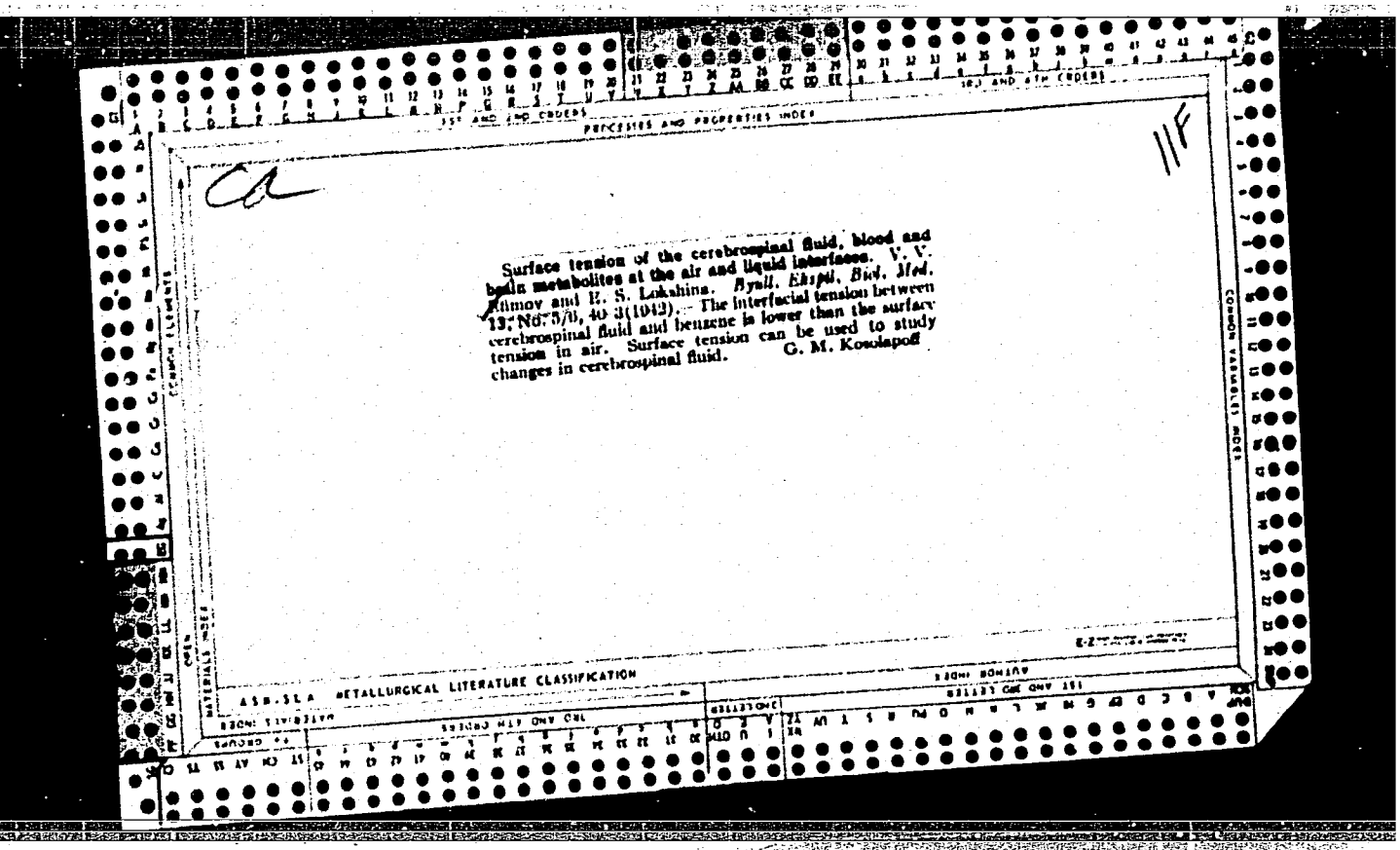


The hemato-encephalic barrier and some physicochemical properties of the cerebrospinal fluid and the serum. V. V. Efimov and E. S. Lokshina. *Bull. biol. méd. expll C. R. S. S. S.* 6, 287-90(1939)(in French).—The differences in the interfacial tension and the cond. between the cerebrospinal fluid and the blood in patients with schizophrenia, progressive paralysis, brain syphilis, epilepsy and arteriosclerosis of the brain show wide variations from the normal with no regularities and cannot be used for diagnostic purposes. These wide differences are attributed to variations in electrolyte concn. rather than concn. of capillary-active substances at the interface. S. A. K.

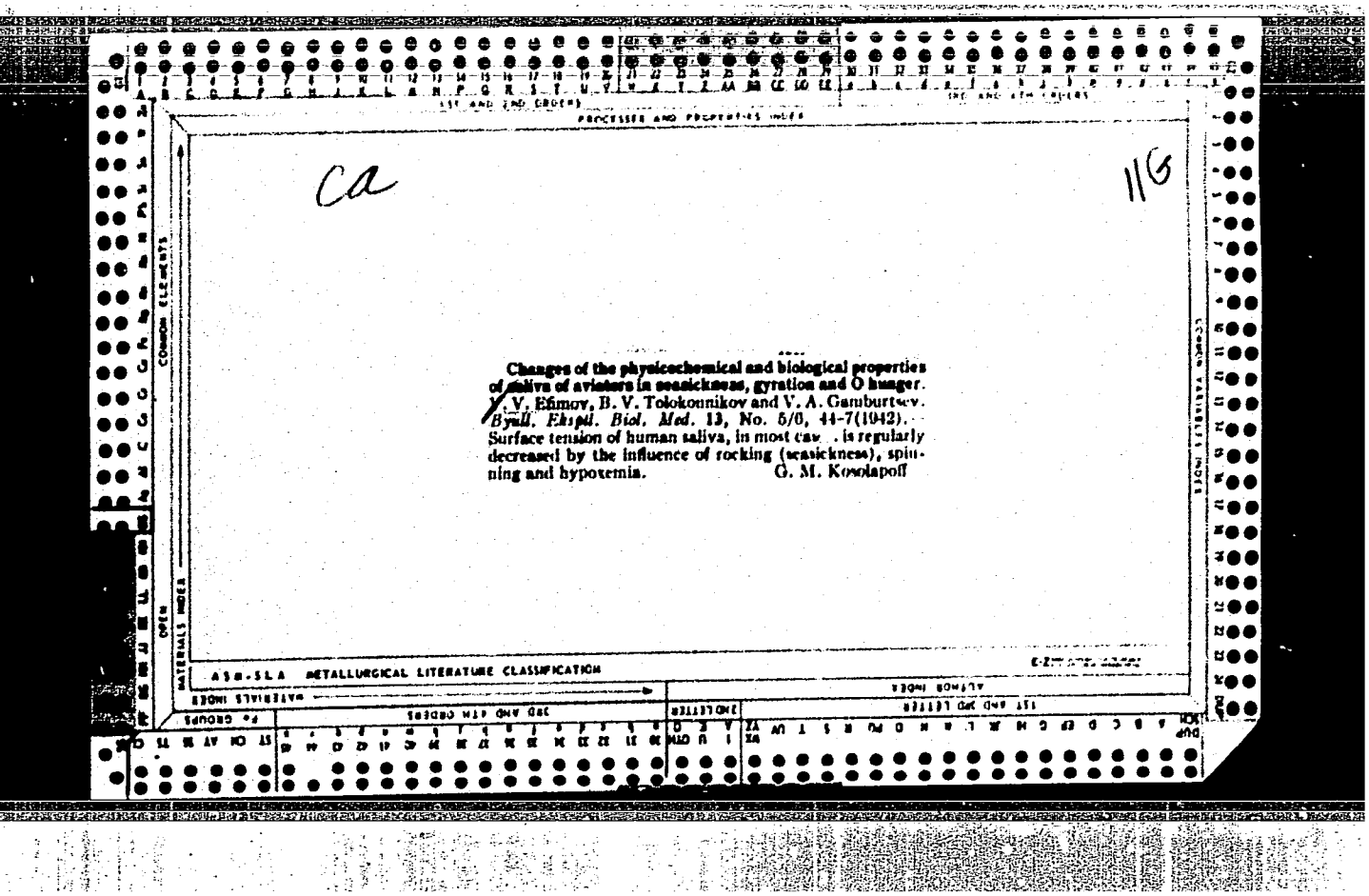
Ca

11 7

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Surface tension of the cerebrospinal fluid, blood and brain metabolites at the air and liquid interfaces. V. V. Klimov and E. S. Lukshina. *Byull. Eksptl. Biol. Med.* 13: No. 5/6, 40-3(1942).—The interfacial tension between cerebrospinal fluid and benzene is lower than the surface tension in air. Surface tension can be used to study changes in cerebrospinal fluid. G. M. Kosolapoff

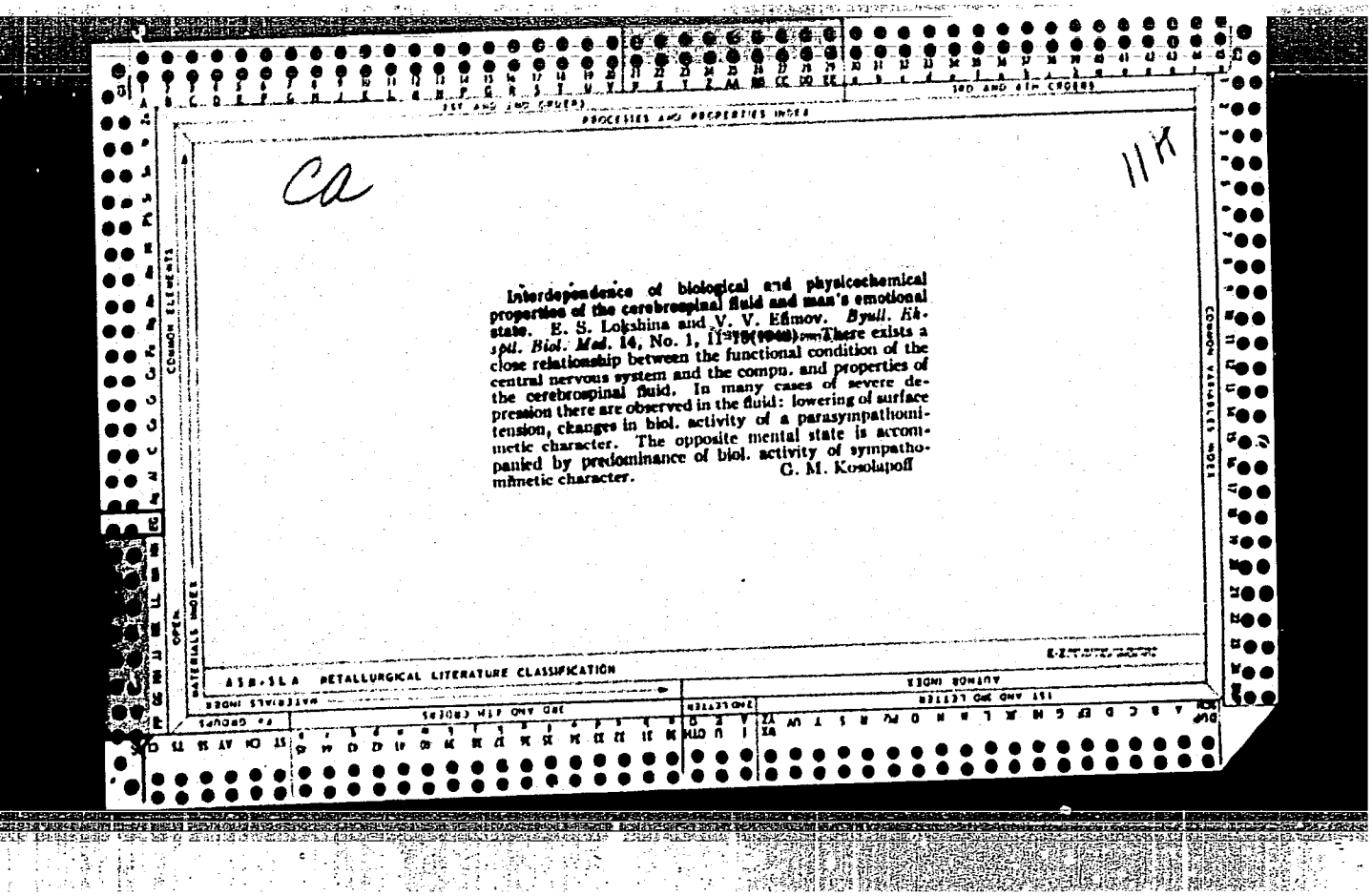


Ca

116

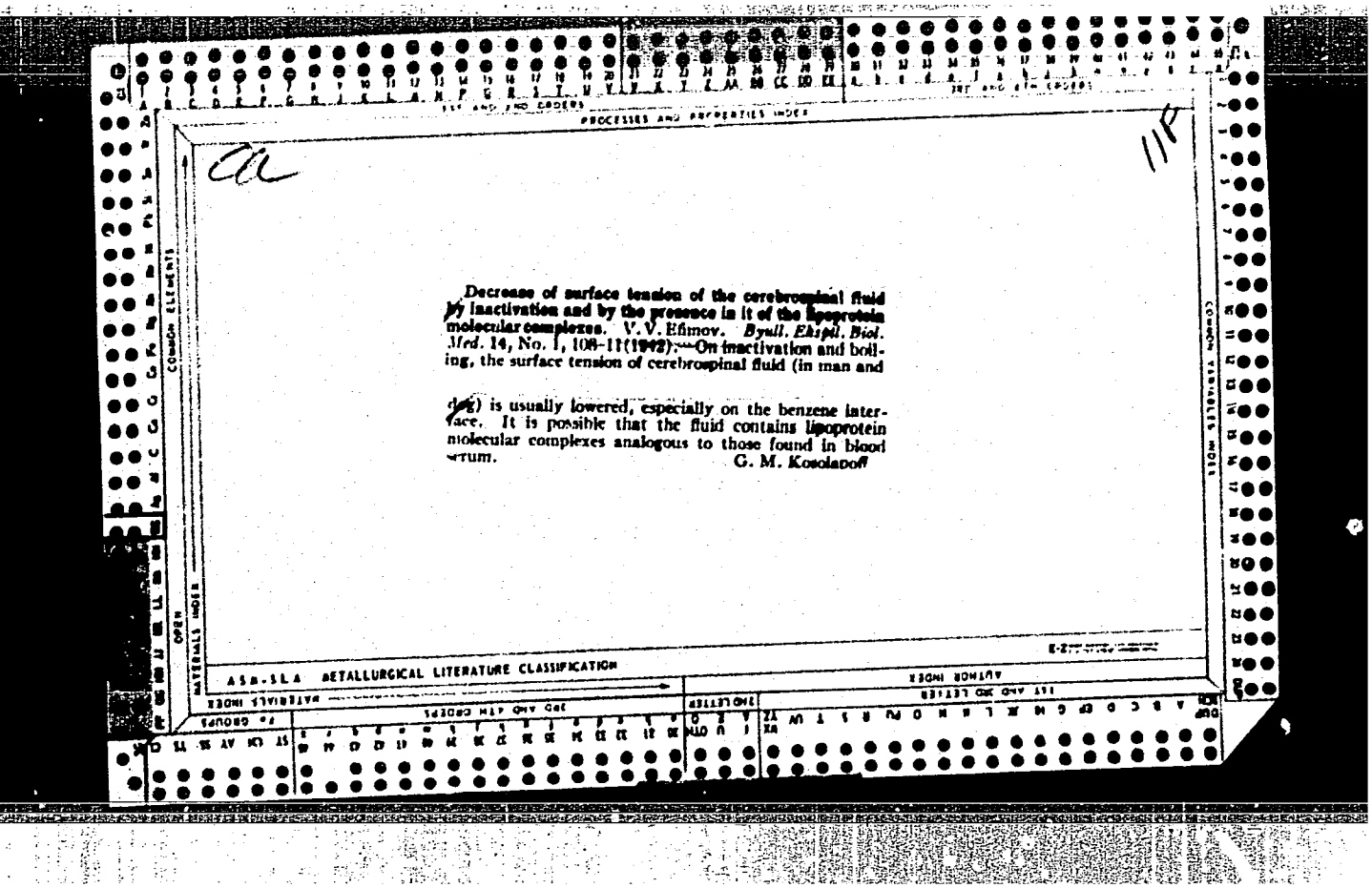
Changes of the physicochemical and biological properties of saliva of aviators in seasickness, gyration and O hunger. V. V. Efimov, B. V. Tokokonnikov and V. A. Gamburtsev. *Byull. Eksptl. Biol. Med.* 13, No. 5/6, 44-7(1942). Surface tension of human saliva, in most cas . is regularly decreased by the influence of rocking (seasickness), spinning and hypoxemia. G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



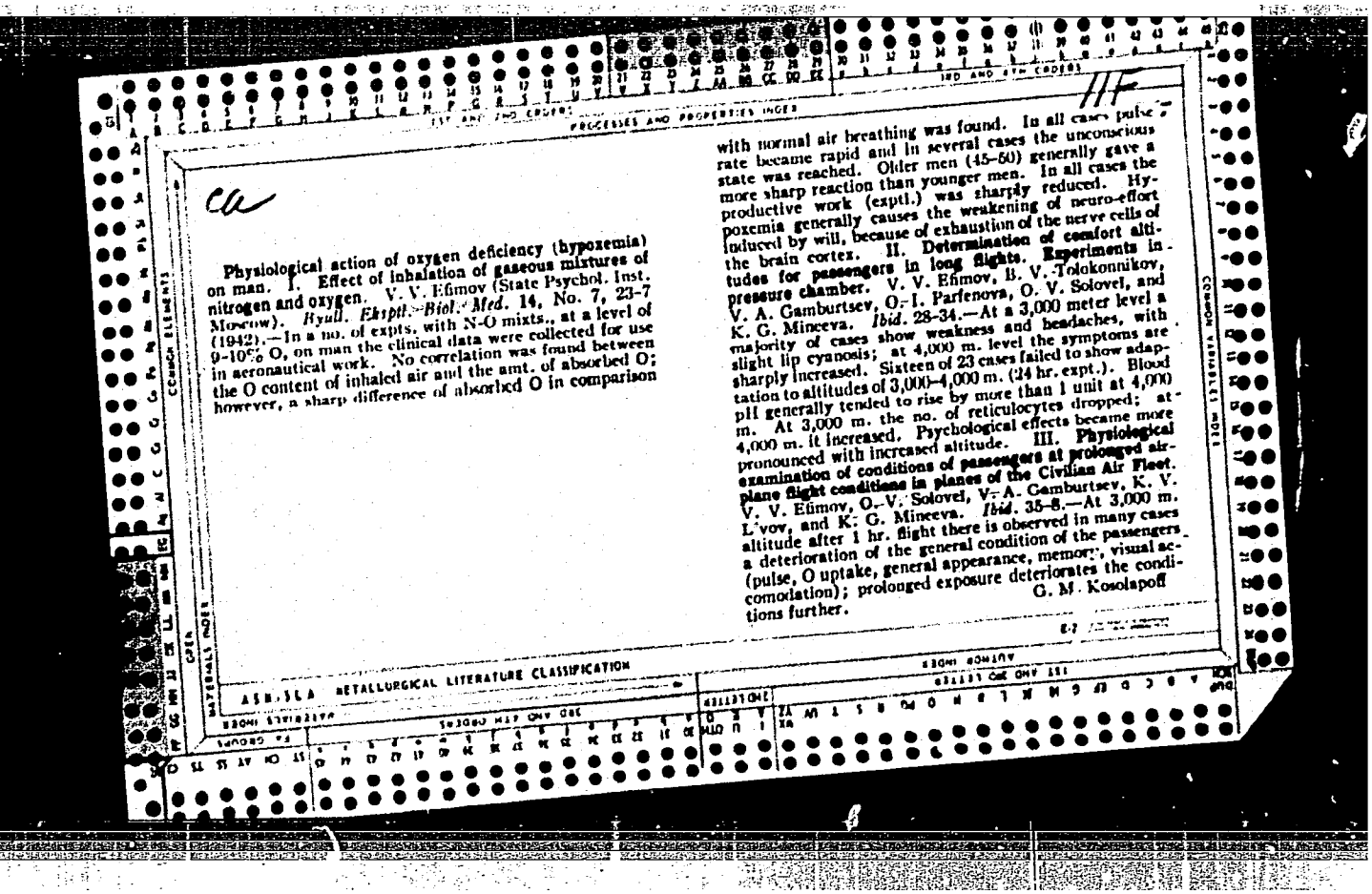
Interdependence of biological and physicochemical properties of the cerebrospinal fluid and man's emotional state. E. S. Lokshina and V. V. Efimov. *Byull. Eksptl. Biol. Med.* 14, No. 1, 11-15(1942).—There exists a close relationship between the functional condition of the central nervous system and the compn. and properties of the cerebrospinal fluid. In many cases of severe depression there are observed in the fluid: lowering of surface tension, changes in biol. activity of a parasympathomimetic character. The opposite mental state is accompanied by predominance of biol. activity of sympathomimetic character.

G. M. Kosolapoff



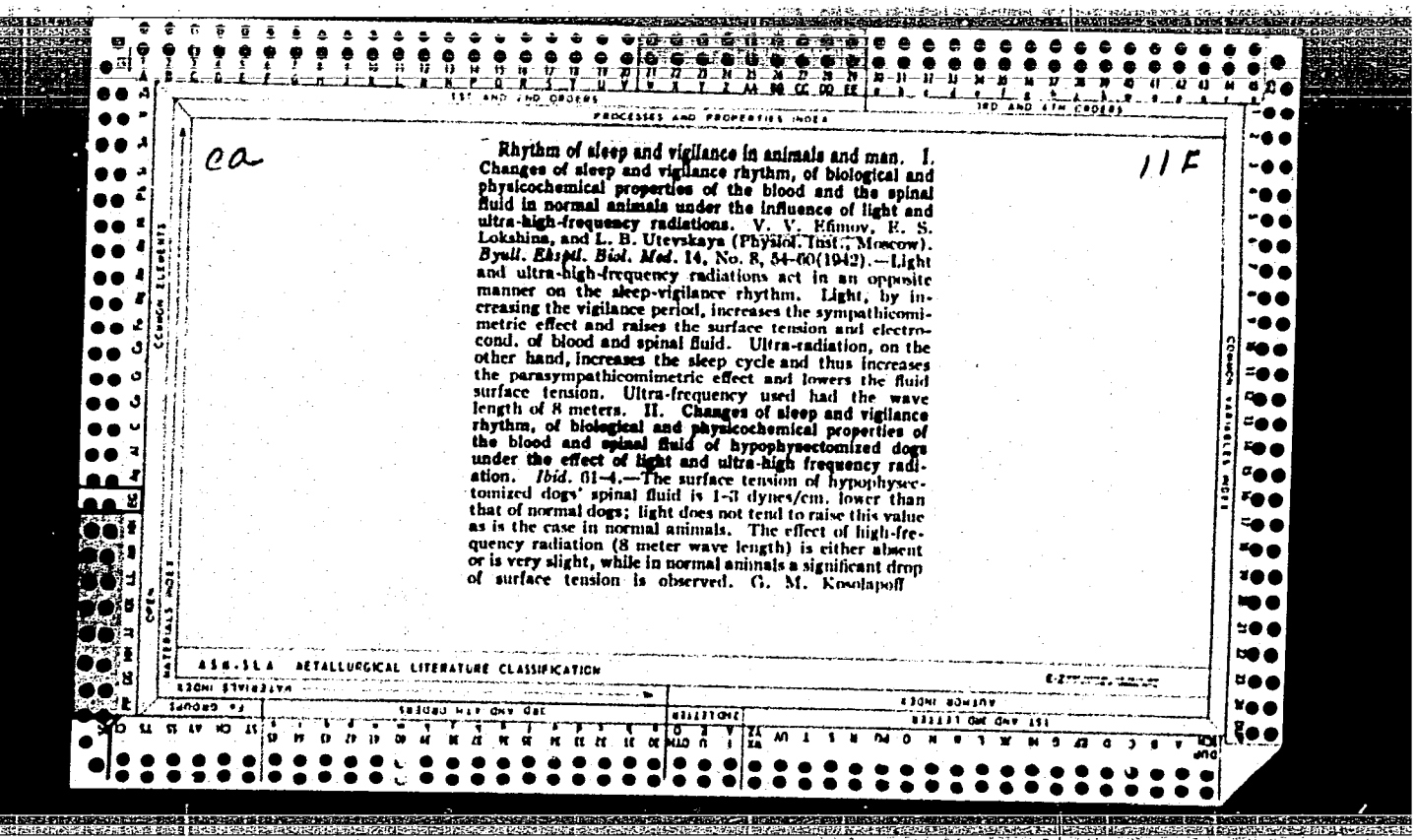
Decrease of surface tension of the cerebrospinal fluid by inactivation and by the presence in it of the lipoprotein molecular complexes. V. V. Efimov. *Byull. Eksptl. Biol. Med.* 14, No. 1, 108-11(1942).—On inactivation and boiling, the surface tension of cerebrospinal fluid (in man and dog) is usually lowered, especially on the benzene interface. It is possible that the fluid contains lipoprotein molecular complexes analogous to those found in blood serum.

G. M. Kosolapoff



Physiological action of oxygen deficiency (hypoxemia) on man. I. Effect of inhalation of gaseous mixtures of nitrogen and oxygen. V. V. Efimov (State Psychol. Inst., Moscow). *Byull. Eksptl. Biol. Med.* 14, No. 7, 23-7 (1942).—In a no. of expts. with N-O mixts., at a level of 9-10% O, on man the clinical data were collected for use in aeronautical work. No correlation was found between the O content of inhaled air and the amt. of absorbed O; however, a sharp difference of absorbed O in comparison with normal air breathing was found. In all cases pulse rate became rapid and in several cases the unconscious state was reached. Older men (45–50) generally gave a more sharp reaction than younger men. In all cases the productive work (exptl.) was sharply reduced. Hypoxemia generally causes the weakening of neuro-effort induced by will, because of exhaustion of the nerve cells of the brain cortex. II. **Determination of comfort altitudes for passengers in long flights. Experiments in pressure chamber.** V. V. Efimov, B. V. Tolokonnikov, V. A. Gamburtsev, O. I. Parfenova, O. V. Solovei, and K. G. Mineeva. *Ibid.* 28-34.—At a 3,000 meter level a majority of cases show weakness and headaches, with slight lip cyanosis; at 4,000 m. level the symptoms are sharply increased. Sixteen of 23 cases failed to show adaptation to altitudes of 3,000–4,000 m. (24 hr. expt.). Blood pH generally tended to rise by more than 1 unit at 4,000 m. At 3,000 m. the no. of reticulocytes dropped; at 4,000 m. it increased. Psychological effects became more pronounced with increased altitude. III. **Physiological examination of conditions of passengers at prolonged airplane flight conditions in planes of the Civilian Air Fleet.** V. V. Efimov, O. V. Solovei, V. A. Gamburtsev, K. V. L'vov, and K. G. Mineeva. *Ibid.* 35–8.—At 3,000 m. altitude after 1 hr. flight there is observed in many cases a deterioration of the general condition of the passengers (pulse, O uptake, general appearance, memory, visual accomodation); prolonged exposure deteriorates the conditions further.

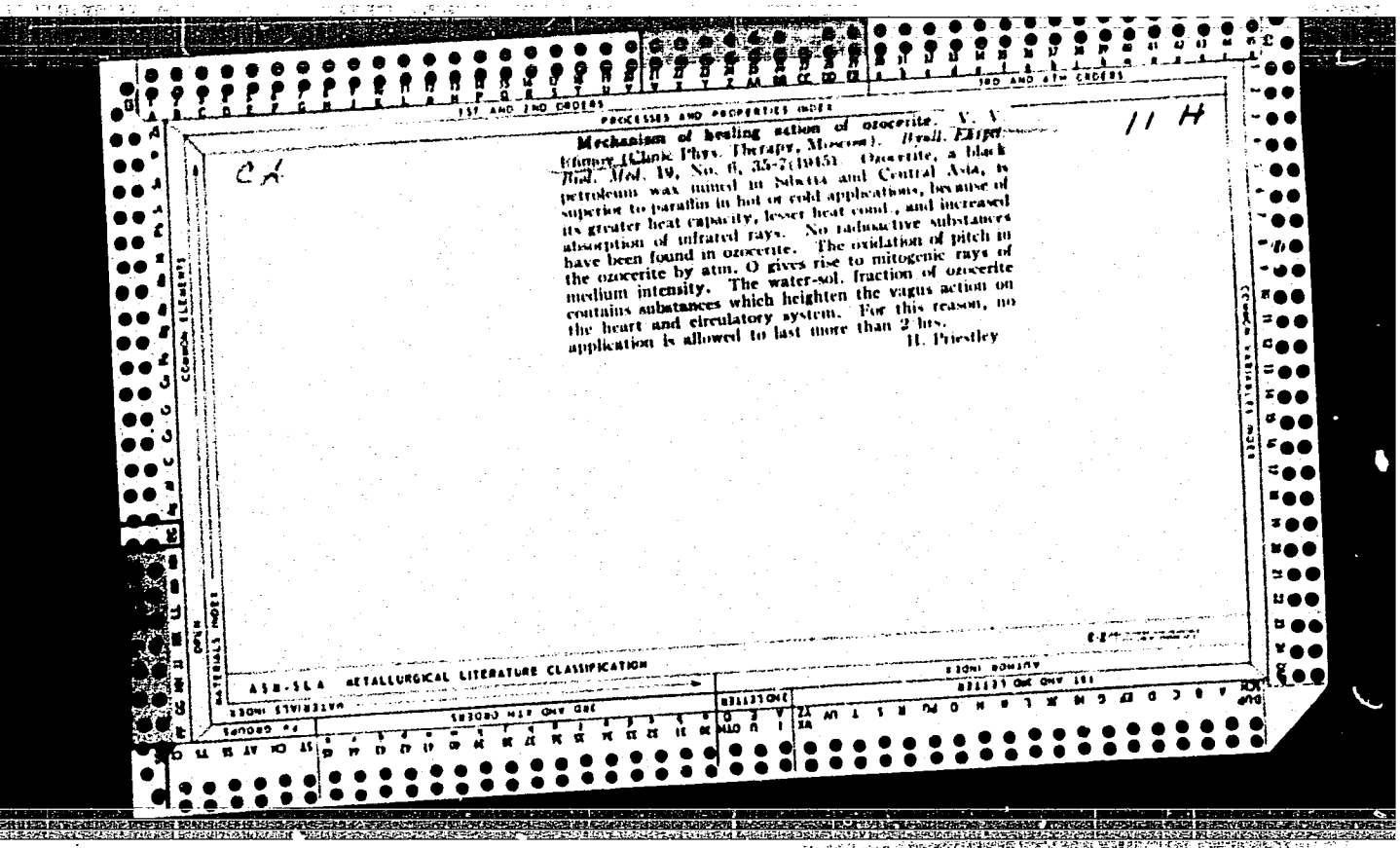
G. M. Kosolapoff



ca

11F

Rhythm of sleep and vigilance in animals and man. I. Changes of sleep and vigilance rhythm, of biological and physicochemical properties of the blood and the spinal fluid in normal animals under the influence of light and ultra-high-frequency radiations. V. V. Efimov, E. S. Lokshina, and L. B. Utevskaya (Physiol. Inst., Moscow). *Byull. Eksptl. Biol. Med.* 14, No. 8, 54-60(1942).—Light and ultra-high-frequency radiations act in an opposite manner on the sleep-vigilance rhythm. Light, by increasing the vigilance period, increases the sympathicomimetric effect and raises the surface tension and electrocond. of blood and spinal fluid. Ultra-radiation, on the other hand, increases the sleep cycle and thus increases the parasympathicomimetric effect and lowers the fluid surface tension. Ultra-frequency used had the wave length of 8 meters. II. **Changes of sleep and vigilance rhythm, of biological and physicochemical properties of the blood and spinal fluid of hypophysectomized dogs under the effect of light and ultra-high frequency radiation.** *Ibid.* 61–4.—The surface tension of hypophysectomized dogs' spinal fluid is 1–3 dynes/cm. lower than that of normal dogs; light does not tend to raise this value as is the case in normal animals. The effect of high-frequency radiation (8 meter wave length) is either absent or is very slight, while in normal animals a significant drop of surface tension is observed. G. M. Kosolapoff



PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

CA

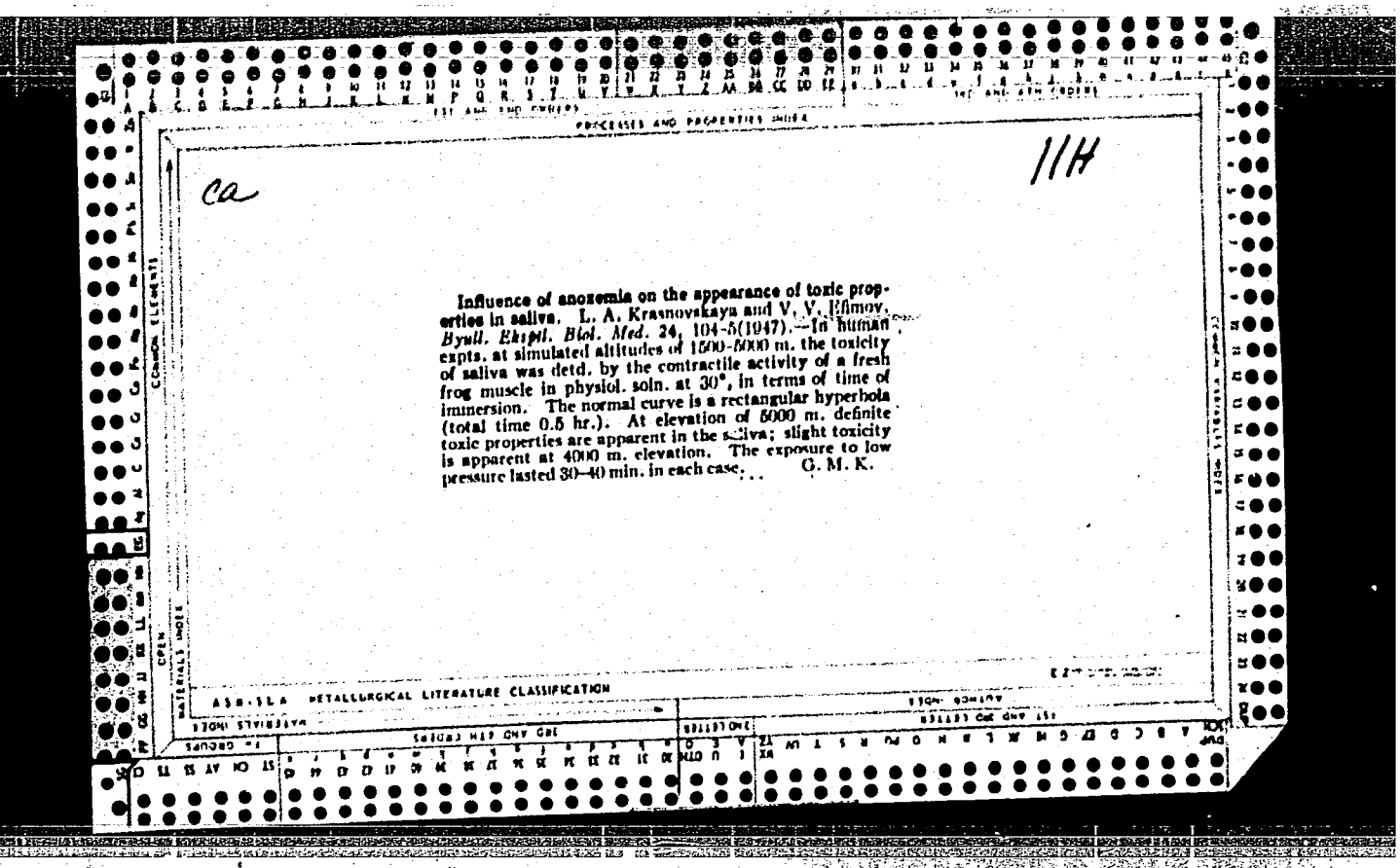
11 H

Mechanism of healing action of ozocerite. V. V. Efimov (Clinic Phys. Therapy, Moscow). *Vrach. Delo* No. 6, 35-7(1945). Ozocerite, a black petroleum wax mined in Siberia and Central Asia, is superior to paraffin in hot or cold applications, because of its greater heat capacity, lesser heat cond., and increased absorption of infrared rays. No radioactive substances have been found in ozocerite. The oxidation of pitch in the ozocerite by atm. O gives rise to mitogenic rays of medium intensity. The water-sol. fraction of ozocerite contains substances which heighten the vagus action on the heart and circulatory system. For this reason, no application is allowed to last more than 2 hrs.
H. Priestley

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX



ca

11H

Influence of anoxemia on the appearance of toxic properties in saliva. L. A. Krasnovskaya and V. V. Efimov. *Byull. Eksptl. Biol. Med.* 24, 104-5(1947).—In human expts. at simulated altitudes of 1500-5000 m. the toxicity of saliva was detd. by the contractile activity of a fresh frog muscle in physiol. soln. at 30°, in terms of time of immersion. The normal curve is a rectangular hyperbola (total time 0.5 hr.). At elevation of 5000 m. definite toxic properties are apparent in the saliva; slight toxicity is apparent at 4000 m. elevation. The exposure to low pressure lasted 30–40 min. in each case. . . G. M. K.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

YEFIMOV, V.V.

42640. Fiziologicheskiye Mekhanizmy Lechebnogo. Deystviya Massazha. (Sravnitel'nyye Izmenniya V Temperature, Elektrosopritivlenii Kozhi I Dvigatel'noy Khronaskii Myshts Ot Ruchnogo I Apparatnogo Massazha). Byulleten' Eksperim. Biologii I Meditsiny, 1948, No. 12, S. 432-34.

YEFIMOV, V. V.

Yefimov, V. V. - "The hygiene of the intellectual work of students", Sem'ya i shkola, 1949, No. 2, p. 32-33.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 8, 1949).

Yefimov, V.V.

FEDOROV, N.T.[reviewer]; YEFIMOV, V.V.[author].

"Biophysics for physicians." V.V.Efimov. Reviewed by N.T.Fedorov.
Fiziol.zhur. 39 no.6:754-756 N-D '53. (MLRA 6:12)
(Biophysics) (Efimov, V.V.)

YEFIMOV, V.V.; GRAINDKOVSKAYA, I.A.

[The sun and health] Solntse i zdorov'e. Moskva, Medgiz, 1957. 88 p. (MIRA 10:11)
(SOLAR RADIATION)

YEFIMOV, V.V., prof.

Microclimate. Zdorov'e 4 no.5:7-8 My '58. (MIRA 11:4)
(CLIMATOLOGY, MEDICAL)

YEFIMOV, V.V., OL'SHANSKAYA, N.M.

Effect of balneological procedures and mud applications on the elasticity of relaxed and tense muscles in polyarthritis and myelitis patients. Vop.kur. fizioter. i lech. fiz. kul't. 23 no.6:532-534 N-D '58 (MIRA 11:12)

1. Iz biofizicheskoy laboratorii (zav. - prof. V.V. Yefimov) Otdela izucheniya kurortnykh resursov (zav. - zaslyzhennyy deyatel' nauki prof. V.A. Aleksandrov [deceased]) TSentral'nogo instituta kurortologii (dir. kand.med.nauk G.N. Pospelova).
(MUSCLES)
(THERAPEUTICS, PHYSIOLOGICAL)

YEFIMOV, V.V.; VADKOVSKAYA, A.D.; OL'SHANSKAYA, N.M.

Infrared radiation of the skin following solar radiation, ocean bathing, and mud applications. Vop. kur., fizioter. i lech. fiz. kul't. 24 no. 4:338-342 Jl-Ag '59. (MIRA 13:8)

1. Iz biofizicheskoy laboratorii (zav. - prof. V.V. Yefimov) otdela izucheniya kurortnykh resursov (zav. - zasluzhennyy deyatel' nauki prof. V.A. Aleksandrov [Deceased]) TSentral'nogo instituta kurortologii (dir. - kand. meditsinskikh nauk G.N. Pospelova).
(INFRARED RAYS--PHYSIOLOGICAL EFFECT)

YEFIMOV, V.V., prof.

Beauty and health. Zdorov'e 6 no.1:3-4 Ja '60. (MIRA 13:4)
(COLOR--PHYSIOLOGICAL EFFECT) (NATURE, HEALING POWER OF)
(SENSES AND SENSATION)

YEFIMOV, V.V.; OL'SHANSKAYA, N.M.

Biophysical properties of human skin. Changes in skin elasticity and lymph circulation following mud treatments and baths. Vop.kur., fizioter.i lech.fiz.kul't. 25 no.1:57-62 '60. (MIRA 13:5)

1. Iz biofizicheskoy laobratorii (zav. - prof. V.V. Yefimov) otdela izucheniya kurortnykh resursov (zav. - zasluzhennyy deyatel' nauki prof. V.A. Aleksandrov [deceased] TSentral'nogo instituta kurortologii (dir. - kand.med.nauk G.N. Pospelova).
(SKIN) (LYMPH) (BATHS, MOOR AND MUD)
(HYDROGEN SULFIDE--PHYSIOLOGICAL EFFECT)
(RADON--PHYSIOLOGICAL EFFECT)

VIL'CHUR, O.M., prof.; YEFIMOV, V.V., prof.; LEPEKHINA, L.P., kand.med. nauk; SOBOLEVA, M.S.

Clinical and electrophysiological parallels in patients with so-called mild closed cerebrocranial injures (concussion of the brain). Khirurgiia 36 no.11:96-102 N '60. (MIRA 13:12)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - deystvitel'nyy chlen AMN SSSR prof. N.N. Priorov) Ministerstva zdravookhraneniya SSSR.
(BRAIN—CONCUSSION) (ELECTROENCEPHALOGRAPHY)

YEFIMOV, V.V., prof.

Body rhythms. Zdorov'e 7 no.7:4-6 Jl '61. (MIRA 14:6)
(PHYSIOLOGY)

VIL'CHUR, O.M.,prof.; YEFIMOV, V.V.,prof.

Clinical and electroencephalographic parallels in patients with so-called "light" electric trauma. Ortop., travm. i protez. 24 no.4:61-64 Ap'63. (MIRA 16:8)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (direktor - prof. M.V.Volkov) Adres avtorov: Moskva A-299, Novaya Ipatovka,d.8, TSentral'nyy institut travmatologii i ortopedii.
(ELECTRICITY, INJURIES FROM) (ELECTROENCEPHALOGRAPHY)

YEFIMOV, V.V.

Stimulating effect of the wind and mild air impulses on the sensory and motor nervous system in men. Vop. kur., fizioter. i lech. fiz. kul't. no.6:497-499 '63. (MIRA 17:8)

1. Iz biofizicheskoy gruppy otdela izucheniya kurortnykh resursov (rukovoditel' G.A. Nevrayev) TSentral'nogo instituta kurortologii i fizioterapii.

YEFIMOV, V.V.

Investigating the efficiency of boring holes with the use of tangential impact stresses. Nauch. trudy KNIUI no.14:207-218 '64. (MIRA 18:4)

YEFIMOV, V.V.

Determining certain characteristics of boring with the use of tangential impact leads and the rotary method. Nauch. trudy KNIUI no.14:218-229 '64. (MIRA 18:4)

YEFIMOV, V.V.

Physicochemical theory of nervous excitation and inhibition; mechanism of the effect of the physiotherapeutic and health resort factors on the human organism. Vop. kur., fizioter. i lech. fiz. kul't. 30 no.1:33-40 Ja-F '65. (MIRA 18:8)

1. TSentral'nyy institut kurortologii i fizioterapii, Moskva.

ACC NR: AP6035932 (A) SOURCE CODE: UR/0413/66/000/020/0196/0196

INVENTOR: Yefimov, V. V.

ORG: none

TITLE: Air-consumption-regulator demand device. Class 61, No. 187531

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 196

TOPIC TAGS: aircraft cabin environment, aircraft cabin equipment, aircraft pressurization equipment, flow regulator, electromeasuring device

ABSTRACT: An Author Certificate has been issued for a demand device with rectilinear characteristics for regulating air-flow rate, which contains sensing elements with a movable control organ electric-circuit contact and two spaces into which pressure is fed from a flow-rate transducer; the latter can be made in the form of a critical Venturi tube. To assure accuracy in the air-flow rate, increase reliability, and to decrease the dimensions and weight, the sensitive elements are made in the form of two spring-supported membranes, with varying effective areas, mounted between the two above-mentioned spaces; the membranes are joined by a rigid center so that the space formed by them is airtight. Orig. art. has: 1 figure. [WA-98]

SUB CODE: 14,01/ SUBM DATE: 21Dec64/

Card 1/1 UDC: 614.894 629.135/138

YEFIMOV, V YE.

AUTHOR: Yefimov, V.Ye. 47-4-11/20

TITLE: A Mechanic's Instrument Kit and Its Use (Nabor po mekhanike i opyty s nim)

PERIODICAL: Fizika v shkole, 1957, No 4, pp 61-70 (USSR)

ABSTRACT: The school, Secondary School at Kugesi, has designed and constructed a set of instruments and appliances enabling students to carry out all demonstrations and experiments provided for by the program of the 8th and 9th grades. The construction is very simple and can be done at every school. The article contains a detailed description of the instruments, measurements, kind of material used, etc. It starts with the wooden box holding the set (Figure 1), mentions two easy movable small carts with a platform of 15 x 7 cm (Figure 7), the model of an airplane (Figure 16), a catapult (Figure 17, a device to demonstrate the principle of the independence of movements (Figure 18), and a number of other devices. The article describes how the rectilinear even motion (Figure 24) is demonstrated or how the coefficient of friction is established (Figure 27), etc.
There are 30 figures in the article.

Card 1/2

47-4-11/20

A Mechanic's Instrument Kit and Its Use

ASSOCIATION: Secondary School at Kugesi, Chuvash ASSR (Kuges'skaya sred-nyaya shkola, Chuvashskaya ASSSR)

AVAILABLE: Library of Congress

Card 2/2

YEFIMOV, Vasiliy Yefimovich; VLADIMIROV, Ya.V., red.; NOVOSELOVA, V.V., tekhn.red.

[Universal set of equipment for mechanical experiments in schools] Shkol'nyi nabor po mekhanike. Moskva, Izd-vo pedagog.nauk RSFSR, 1961. 100 p. (MIRA 14:4)
(Mechanics--Experiments)

YEFIMOV, V. Ye.

Use of local bleaching clays for the regeneration of used oils. Trudy DFAN SSSR. Ser. khim. no.4:116-118 '60. (MIRA 14:10)
(Clays)
(Oil reclamation)

S/145/62/000/002/006/009
D262/D308

10,7500

AUTHOR: Yefimov, V.Ye., Engineer

TITLE: Vibrations of closed cylindrical shells under certain edge conditions

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 2, 1962, 96 - 104

TEXT: The equations of vibrations for typical boundary conditions for closed cylindrical shells are deduced by applying the variation method of Bubnov-Galerkin. The variation equations of motion are obtained from the equation of total energy of deformation of cylindrical shell during its vibration. Four cases of boundary conditions: 1) Both edges free, 2) both edges freely supported, 3) both edges fixed, 4) one edge fixed, the other free, are considered and equations for frequency of vibration for each case are deduced. The comparison of experimental and calculated values shows that the errors are comparatively small. The experimental installation is described in detail. There are 1 figure and 2 tables.

Card 1/2

S/145/62/000/002/006/009
Vibrations of closed cylindrical ... D262/D308

ASSOCIATION: Leningradskiy voyenno-vozdushnaya akademiya (Leningrad Air Military Academy)

SUBMITTED: April 10, 1961

Card 2/2

YEFIMOV, V.Ye.; LAPCHEVA, V.F.; SULAKVELIDZE, G.K.

Radar method for determining the seats of origin of hails.
Meteor. i gidrol. no.10:10-14 O '63. (MIRA 16:11)

1. Vysokogornyy geofizicheskiy institut.

SEDOV, V.N., kand.tekhn.nauk; YEFIMOV, V. Yu., inzh.; GRIGOR'YANTS, A.A., inzh.

Program control of traffic at railroad stations. Avt., telem. i sviaz' 5 no.1:4-6 Ja '61. (MIRA 14:3)
(Railroads--Signaling--Centralized traffic control)

PASHENTSEV, Igor' Dmitriyevich; YEFIMOV, Vladimir Yur'yevich; BARTMER, A.Ye., red.; TELYASHOV, R.Kh., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Contactless numerical pulse-code generator and relay with great time delay] Beskontaktnyi generator impul'sov chislovogo koda i rele bol'shikh vyderzhek vremeni. Leningrad, 1962. 15 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Elementy avtomaticheskogo kontrolia i regulirovaniia, no.14) (MIRA 16:6)
(Electric relays) (Oscillators, Electric)

SEDOV, V.N., kand.tekhn.nauk, dotsent; YEFIMOV, V.Yu., inzh.

Concerning the economic effectiveness of using a.c. switch drives. Avtom., telem.i sviaz' 6 no.4:11-14 Ap '62. (MIRA 15:4)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo transporta.
(Railraods--Switches) (Railroads--Electric equipment)

PEREBOROV, A.S., kand.tekhn.nauk, dotsent; YEFIMOV, V.Yu., inzh.

Adapters for coupling control computers and CTC systems in automatic train traffic control. Sbor. trud. LIIZHT no.205:21-27 '63. (MIRA 18:1)

BELYAZO, I.A., inzh.; MARUTA, P.I., inzh.; YEFIMOV, V.Yu., inzh.

Three-wire network for controlling switch drives with three-phase electric motors. Avtom., telem. i sviaz' 8 no.7:8-10 Jl '64. (MIRA 17:12)

1. Gosudarstvennyy proyektno-izyskatel'skiy institut po proyektirovaniyu signalizatsii, tsentralizatsii, svyazi i radio na zheleznodorozhnom transporte (for Belyazo, Maruta). 2. Leningradskiy ordena Lenina institut inzhenerov zheleznodorozhnogo transporta imeni akademika V.N. Obraztsova (for Yefimov).

YEFIMOV, V.Yu., inzh.

Economic effectiveness of using electric switch drives with three-phase MST-0,25 motors. Sbor.trud.LIIZHT no.223:56-66 '64.
(MIRA 18:9)

YEFIMOV, Ye. and SENICHKIN, G.

"Technical Maintenance of Aircraft and Engines," Moscow, 1952

Summary translation D 312232, 12 Sep 55

1. YEFIMOV, YE.

2. SSSR (600)

4. Nonferrous Metals

7. Economizing nonferrous metals.
Za ekon. mat. No. 5, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

GORYASHIN, V., sotrudnik; YEFIMOV, Ye., zootekhnik

Crossing black and white cows with Jersey bulls. Nauka i perea. op. v sel'khoz. 8 no.9:25-27 S '58. (MIRA 11:10)

1. Pushkinskaya laboratoriya razvedeniya sel'skokhozyaystvennykh zhivotnykh (for Goryashin). 2. Sovkhoz "Lyuban'" (for Yefimov). (Dairy cattle breeding)

Electrochemistry

YEFIMOV, Ye.A.

6

— The oxygen overvoltage in [redacted] solutions. N. A. Izgaryshev, E. A. Efimov, and [redacted] Maloshuk (D. I. Mendeleev Chem. Technol. Inst., Moscow). *Zhur. Fiz. Khim.* 27, 310–11(1953); cf. *C.A.* 47, 6823d.—The magnitude $dE/d \log i$ is a discontinuous function of the concn. of H_2SO_4, and the breaks of the curve appear at the compns. corresponding to hydrates such as $H_2SO_4 \cdot 6H_2O$ and $H_2SO_4 \cdot 2H_2O$. E is overvoltage; i is c.d. J. J. Bikerman

NF 7-13-54

(CA 48 no.1 : 58 '54)

YEFIMOV, Ye.A.

IZGARYSHEV, N. A.; EFIMOV, Ye. A.

Electrolysis

Investigation of the anodic process during electrolysis of aqueous solutions of sulfuric acid in concentrations corresponding to the characteristic points of D. I. Mendeleev and N. S. Kurnakov diagrams, Zhur. fiz. khim. 27, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

YEFIMOV, Ye. A. —

"An Investigation of the Anode Processes on Smooth Platinum in Aqueous Solutions of Sulfuric Acid." Cand Tech Sci, Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev, 27 Oct 54. (VM, 13 Oct 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

YEFIMOV, E.A.

USSR/Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22511.

Author : E. A. Yefimov, N. A. Izgaryshev.
Inst : Not given
Title : The influence of oxidation degree of a platinum anode on kinetics of electrochemical oxygen formation in sulfuric acid solutions.

Orig Pub : Zh. fiz. khimii. 1956, 30, No 7, 1606-1614.

Abstract : Kinetics of electrolytic oxygen formation from H_2SO_4 solutions at 25° in the range I $2.57 \cdot 10^{-6}$ - $3.19 \cdot 10^{-2}$ a/cm^2 on a polished Pt-anode, subjected in many cases to a preliminary anode polarization (AP), were studied by method of polarization curves. Experimental data are given in form of dependence of the anodic potential φ on lg I. The values of constant b in Tafel's equation for solutions 1.00, 8.88, 17.36, 24.61, 30.69, 35.87 n. of H_2SO_4 in absence of AP are equal to 0.156, 0.170, 0.188, 0.209, 0.222, 0.175 respectively, and after a preliminary AP (15 min) at I $2.13 \cdot 10^{-3}$ a/cm^2 - are equal to 0.108, 0.124, 0.145, 0.167, 0.182, 0.142 respectively. It was found that a preliminary I-minute AP at I $2.13 \cdot 10^{-3}$ a/cm, for all

Card 1/2

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22511.

studied concentrations of H_2SO_4, brings about a decrease of constant b on approx. 0.04 v in comparison with its value on an electrode not subjected to a preliminary ΔP. Longer ΔP (till 15 minutes) brings a small further decrease of V, and a still longer ΔP over 15 minutes (down to 7 hours) does not produce a supplementary decrease of b but increases the constant a of Tafel's equation. Authors presume that the process of electrolytic formation on Pt contains stages of formation and disintegration of Pt oxides.

YEFIMOV, E. A.

B-12

USSR/Physical Chemistry. Electrochemistry.

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22512.

Author : N. A. Izgaryshev, E. A. Yefimov.
Inst :: Not given
Title : Dependence study of kinetics of oxygen formation on a polished platinum anode on sulfuric acid concentration.

Orig Pub : Zh. fiz khimii, 1956, 30, No 8, 1807-1815 (Rez ang).

Abstract : By method described before (see prec. refer.) were studied kinetics of electrolytic oxygen formation from 53 H_2SO_4 solutions of different concentrations (0.001 to 35.87 n) on a polished Pt-anode at 25° with the application of a 30 minute preliminary anode polarization at I $2.13 \cdot 10^{-3}$ a/cm^2. The dependence of φ on lg I (φ - anodic potential) are linear in almost the entire studied range I ($2.57 \cdot 10^{-6}$ - $3.19 \cdot 10^{-2}$ a/cm^2). In concentration areas of H_2SO_4, 0.001-0.74 n and 18.47-30.35 n dependencies of φ on lg I have two linear sectors with different slopes. The values of constants b of Tafel's equation are calculated and put into scales for all studied H_2SO_4 concentrations. Curve expressing dependence of b on H_2SO_4 concentration has breaking points which correspond approx. to the composition

-181-

Card 1/2

USSR/Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22512.

of D. I. Mendeleyev's special points - $H_2SO_4 \cdot 150H_2O$; $H_2SO_4 \cdot 6H_2O$; $H_2SO_4 \cdot 4H_2O$; $H_2SO_4 \cdot 2H_2O$; $H_2SO_4 \cdot H_2O$; and passes through maximum at H_2SO_4 concentration of 30.69 n ($H_2SO_4 \cdot H_2O$) (R Zh. Khim. 1953,2875,4405). On the basis of data gathered experimentally, a notion about the mechanism of electrolytic oxygen formation from sulfuric acids is developed, at the base of which lie suppositions about a decisive influence on this process of the anions dehydration stage, and also of the stage of formation and desintegration of Pt oxide compounds on the anode surface.

Card 2/2 -182-

YEFIMOV, YE. A.

USSR/Physical Chemistry - Electrochemistry, B-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61173

Author: Yefimov, Ye. A., Izgaryshev, N. A.

Institution: None

Title: On the Mechanism of Electroxidation of Sulfuric Acid to Persulfuric Acid

Original Periodical: Dokl. AN SSSR, 1956, 106, No 6, 1039-1041

Abstract: Investigated was the dependence of the yield on the basis of current consumption (YC) of the total active oxygen (active oxygen contained in the resulting $H_2S_2O_8$, H_2SO_4 and H_2O_2) during electroxidation of H_2SO_4 to $H_2S_2O_8$, upon the concentration of H_2SO_4 (5.0-37.87 N) and anodic current density i (2; 0.75 and 0.075 a/cm^2). To hinder the occurrence of secondary reactions investigation was conducted at 6^o-10^o and high volumetric current density; duration of each experiment was of 5 minutes. It is shown that with the investigated i the YC increases with concentration of

Card 1/2

USSR/Physical Chemistry - Electrochemistry, B-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61173

Abstract: H_2SO_4 to a certain maximum value (for example 76.6% with i = $2a/cm^2$ and 56.4% with i = $0.075a/cm^2$) and drops thereafter. Increase of i shifts the maximum toward more diluted solutions and increases its value. Comparison of obtained results with literature data on HSO_4^- ion content of H_2SO_4 solutions depending on their concentration reveals a parallelism between YC and HSO_4^- content of the electrolyte and gives reason for considering that formation of $H_2S_2O_8$ takes place according to the equation: $2HSO_4^- - 2e \rightarrow 2HSO_4 \rightarrow H_2S_2O_8$.

Card 2/2

~~YE-1-11401,~~ ~~№ 11~~

USSR/Physical Chemistry - Electrochemistry. B-12

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7316.

Author : Ye. A. Efimov, N.A. Izgaryshev.
Inst :

Title : Study of Kinetics of Sulfuric Acid Electrooxidation.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 5, 1141-1149.

Abstract: The kinetics of H_2SO_4 (5.0 to 36.87 n.) electrooxidation at i = 4.17 . 10^{-3} to 2.0 a per sq.cm was studied by the method of polarization curves at 18° in a cell with a ceramic diaphragm on a Pt anode (RZhKhim, 1957, 22511). Also the yield per current (YC) of H_2SO_5 and $H_2S_2O_8$, H_2O_2 and the total active oxygen in the solution (H_2O_2+ $H_2S_2O_8$ + H_2SO_5 converted into $H_2S_2O_8$) was determined in the experiments with short-timed (5 min.) electrolysis of H_2SO_4 solutions with the application of i of 2.0, 0.75 and 0.075 a per sq.cm at 6 to 10°. The

Card : 1/2

Chem Tech Inst im D. I. Mendeleyev, Moscow

USSR/Physical Chemistry - Electrochemistry. B-12

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7316.

curves YC-H_2SO_4 concentration pass through a maximum (RZhKhim, 1956, 61173). No characteristic points of D.I. Mendeleyev, i.e., points answering the compositions $H_2SO_4.6H_2O$, $H_2SO_4.4H_2O$, $H_2SO_4.2H_2O$ and $H_2SO_4.H_2O$, were revealed on these cuves for $H_2S_2O_8$ and the total active oxygen, but the heights and positions of the maxima on the concentration axis change with the change of i. YC of H_2SO_5 rises noticeably starting from the H_2SO_4 concentrations $\geq$ 13.35 n. ($H_2SO_4.6H_2O$) and they reach the maximum at the H_2SO_4 concentration of 24.61 n. ($H_2SO_4.2H_2O$) at all investigated i-s. The dependences (φ, log i) in the range of $i > 10^{-2}$ a per sq.cm are not described by Tafel's equation. Considerations regarding the character of current distribution among the fundamental anode reactions in various H_2SO_4 concentration zones are expressed. In the author's opinion, the reaction of anode dissociation of H_2SO_5 plays an essential part in the process of H_2SO_4 electrolysis.

Card : 2/2

76-32-2-26/38

AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G.

TITLE: An Investigation of the Kinetics of the Anodic Dissolution of Germanium (Issledovaniye kinetiki anodnogo rastvoreniya germaniya)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 2, pp. 413-417 (USSR)

ABSTRACT: According to the method of polarization curves and potential over time curves the kinetics in the anodic dissolution of germanium in dependence on its type of conductivity -electron- and hole conductivity - was investigated. It is shown that with current densities of more than 3.10^{-3} A/cm^2 the process of anodic dissolution of n-germanium is greatly different from that of p-germanium. It is assumed that the kinetics of the anodic dissolution of germanium is limited by the diffusion velocity of the positive charge carriers- the holes from the depth of the semiconductor to its surface. It is shown that with current densities of 0,15 A/cm^2 the

Card 1/2

76-32-2-26/38

An Investigation of the Kinetics of the Anodic Dissolution of Germanium

anode potential of p-germanium increased to 200 mV within 30 minutes, showing the same periodic oscillations of the potential as with n-germanium. It is assumed as not being impossible that the oxide layer at the germanium surface has semiconductor properties itself, which complicates the process investigated here. Summarizing it is stated that an investigation of the electrochemical reaction of germanium without taking into account the type of conductivity and the electric parameters can not furnish a correct picture of the processes investigated. There are 4 figures, and 5 references.

SUBMITTED: December 3, 1956

1. Germanium--Electrochemistry

Card 2/2

76-32-5-24/47

AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G.

TITLE: The Effect of the Electrophysical Properties of Germanium on the Process of Its Anodic Dissolution (Vliyaniye elektrofizicheskikh svoystv germaniya na protsess yego anodnogo rastvoreniya)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp. 1103-1106 (USSR)

ABSTRACT: Since the kinetics of the process depends on the diffusion of the holes to the surface of the semiconductor it is to be expected that the magnitude of the specific resistance of germanium and the diffusion length also exert an influence on the course of the anodic process, so that in the present work this is investigated with respect to p- and n-types of germanium. Polarization curves were plotted by means of an already described plant and method, in which case it was especially clearly observed with the increase of the resistance of the n-type of the germanium that an essential decrease of polarization takes place, while in the case of the n-type the effect is essentially smaller and has a reverse character. In the case of higher specific resistances the difference between

Card 1/2

the polarization curves of the two types is small, which is explained by the assumption that the kinetics of the anode dissolution of germanium at current densities of above 3.10^{-3} A/cm^2 is determined by the diffusion velocity of the carriers with positive charge - the holes from the depth of the semiconductor to its surface; this is proved by the data on the influence of the temperature on the shape of the anode polarization curves. From the experimental results on the influence of the diffusion length can be seen that with the above mentioned current densities the same effect was observed as in the case of the specific resistance, but that it is smaller. On the mentioned conditions a decrease of the saturation current of the holes in the crystal will lead to an increase of the polarization with the increase of the diffusion length with equal current densities, which is in agreement with the obtained experimental data. There are 4 figures and 2 references, 2 of which are Soviet.

SUBMITTED: January 29, 1957

1. Germanium--Electrical properties 2. Germanium--Physical properties 3. Germanium--Electron transitions

SOV/20-122-4-26/57

5(4)

AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G.

TITLE: A Germanium Electrode With a p-n-Transition (Germaniyevyy elektrod s p-n-perekhodom)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 632-634 (USSR)

ABSTRACT: According to the results of some previous papers (Refs 1, 2), the anodic dissolution of germanium depends on the concentration of the holes on the surface of the semiconductor. It was interesting, therefore, to investigate the behavior of a germanium electrode with a p-n-transition. By means of such a transition, holes could be injected and a region of a reduced content of carriers could be formed. The experiments described in this paper were carried out on a plate of germanium of the electron conductivity type (specific resistance 20 Ohm.cm, diffusion length 1 mm). The initial thickness of the plate was 250 μ. The carrying out of the experiments is discussed in a few lines. A diagram gives the polarization curves for the anodic dissolution of germanium found for the current density interval

Card 1/3

10^{-6} - 10^{-2} A/cm^2. The second diagram gives the variation of the potential of the germanium anode if the positive pole of the current source is connected with an Ohmic ring contact, and if the external circuit of the p-n-transition is disconnected. It is expected that the injection of the holes into the germanium will diminish the polarization of the electrode reaction. In thin germanium plates (for current densities $I > 10^{-3}$ A/cm^2) the anodic dissolution proceeds with a higher polarization than in thick germanium plates. An increase of the return displacement (u_{return}) may extend the region of the space charge to such an extent that it reaches the germanium surface which is in contact with the electrolyte. In order to investigate the behavior of the electrode under such conditions, the authors measured its potential and its capacity for a frequency of 5000 cycles and for various return displacements on the p-n-transition. If u_{return} increases to 15 - 20 V, the capacity of the electrode decreases sharply. However, the potential of the electrode does not vary up to u_{return} = 15 - 20 V, and it grows slowly above this value. If the space charge reaches the surface of the germanium plate, the selfdissolution of germanium becomes slower because of a

lack of holes, and the potential of the electrode becomes higher. There are 2 figures and 3 references, 1 of which is Soviet.

PRESENTED: May 23, 1958, by A. N. Frumkin, Academician

SUBMITTED: May 21, 1958

SOV/76-33-2-32/45

5(4)
AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G.

TITLE: An Investigation of the Capacity of the Germanium Electrode (Issledovaniye yemkosti germaniyevogo elektroda)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 441 - 446 (USSR)

ABSTRACT: The method of curves of differential capacity makes possible a determination of the zero point of the electrode metal as well as giving information on the condition of the electrode surface. The single paper which reports a measurement of the capacity of the germanium electrode is that of Bohnenkamp and Engel (Bonenkamp)(Ref 1). In the present paper the measurement was carried out according to the method described by M. A. Proskurnin and A. N. Frumkin (Ref 2). A GSNCh-99I generator, a bridge connection constructed on the basis of the universal RFT bridge, and a LV-9-2 lamp voltometer were used. The anodic measurements took place in a nitrogen atmosphere and the cathodic in a hydrogen atmosphere. Before each curve determination the electrode was polished and cleaned in SR-4 mordant. According

Card 1/3

to the equation of R. M. Vasenin (Ref 4) the zero charge for germanium is 0.34 volt and according to the calculation data of Ye. A. Ukshe and A. I. Levin (Ref 5) it is 0.63 (-0.47) volt. In the work reported here the measurements were carried out in 0.1 n hydrochloric acid at frequencies of 60, 200 and 1000 hertz. The C-ψ curves for germanium of p-type (Figs 1,2) and for monocrystals of germanium of the electron type (n-type) show a sharp minimum at 0.6 volt. This value is close to that of (Ref 5) but much lower than that calculated from the equation of Vasenin. Curves were plotted for the differential capacity for germanium of the p and n-types at current densities of about 10^{-5} - 10^{-1} ampere/cm^2 in 0.1 n hydrochloric acid and at frequencies of 200, 1000, and 5000 hertz (Figs 3-5). These curves showed several differences in that there was a dependence shown upon the type (n- or p-) and upon the size of the specific resistance of the Ge. A polarization at potentials somewhat above 0.5 volt led to the formation of spots (yellow-brown color) on the germanium anode, which was attributed to the formation of a phase oxide of the type GeO. There are 6 figures and 7 references, 6 of which are Soviet.

5(4)
AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G. SOV/20-124-3-33/67

TITLE: The Investigation of Electrode Reactions on a Silicon Cathode (Issledovaniye elektrodnykh reaktsiy na kremniyevom katode)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 609-612 (USSR)

ABSTRACT: By employing the method of polarization measurement the authors investigated the electronic separation of hydrogen and the reduction of potassium ferricyanide on monocrystalline silicon of the p- and n-type orientated in the direction 111. These investigations were carried out at current densities of from 10^{-6} to 10^{-1} a/cm^2 at t = 20°. The method of experimental investigation has already been described (Ref 6). The ohmic contacts with silicon were established by the electrolytic application of rhodium. By a previous treatment of silicon in boiling KOH (5-10%) the same results were obtained. A hydrogen electrode was used in the acid solutions for purposes of comparison, and in basic solutions a saturated calomel half-element was used for the same purpose. A diagram shows the dependence of the overpressure of hydrogen on the logarithm of

Card 1/3

The Investigation of Electrode Reactions on a Silicon Cathode

SOV/20-124-3-33/67

current density in 2n H_2SO_4 on silicon of the p- and n-type with different specific resistance and with a life of the unreal current carriers of 30-40 μsec. All curves in the interval of current densities of 10^{-6} to 10^{-4} a/cm^2 are practically in agreement and have a coefficient of inclination of b = 0.18. However, at higher current densities this agreement ceases. For 1n KOH the curves are of similar character. All curves shown in the diagrams were determined with the electrolyzer completely darkened. The course taken by the curves of hydrogen overpressure for silicon differs considerably from the analogous curves for germanium. According to the authors opinion, the difference in the course taken by the curves of hydrogen on silicon of the p- and n-type in 2n H_2SO_4 is due to the ohmic voltage drop in the impoverished layer of the semiconductor. For the purpose of confirming this assumption, the authors determined the differential capacity of the silicon electrode at a frequency of 200 cycles. The greatest ohmic voltage drop must occur with silicon of the p-type. The decrease

Card 2/3

The Investigation of Electrode Reactions on a Silicon Cathode

SOV/20-124-3-33/67

of hydrogen overpressure on p-type silicon at 100-200 mv under the effect of light tends to show that certain difficulties exist in connection with conveying the supply of electrons from the interior of the semiconductor to its surface. This is, however, not the only reason for hydrogen overpressure. According to the experiments carried out by the authors the influence of the semiconductor properties of the cathode upon the kinetics of electrochemical reactions manifests itself in a different manner in the case of different reactions. The more electrochemical polarization of the reaction on the cathode decreases, the more distinctly will the influence exercised by the semiconductor properties of the electrode material manifest themselves. There are 4 figures and 6 references, 2 of which are Soviet.

PRESENTED: September 11, 1958, by A. N. Frumkin, Academician

SUBMITTED: September 10, 1958

Card 3/3

SOV/20-128-1-33/58

5(4)
AUTHORS: Yefimov, Ye. A., Yerusalimchik, I. G.

TITLE: On Particular Features of Electrolytic Oxidation Reactions on a Germanium Anode

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 124-126 (USSR)

ABSTRACT: It is an established fact that the kinetics of the anodic dissolution of n-germanium is limited by the diffusion of the holes from the interior of the semiconductor to the surface (Refs 1-5). A similar influence of the semiconductor properties was therefore to be expected also for other anodic reactions. The electrolytic oxidation of bivalent vanadium on a rotating n-germanium anode, however, showed (Ref 6) that the V^{2+}-ions are oxidized without any restriction in that potential range in which the dissolution rate of germanium is limited because of the lack of holes. The question was therefore investigated as to whether in this case a specific behavior of vanadium ions is concerned, or whether this phenomenon occurs also with other oxidations. An investigation was carried out of the oxidation of the oxalate anions and of iodine. Figure 1 shows the dependence of the potential

Card 1/4